

حمل الآن

مجاناً وحصرياً

المراجعة رقم (1)

الترم الاول



Important questions on unit one

From the directorates' exams



First Multiple choice questions

- 1 If $\frac{x}{20} = \frac{3}{4}$, then $x = \dots\dots\dots$ (El-Mokattam - Cairo 25)
 (a) 5 (b) 10 (c) 15 (d) 30

- 2 If $\frac{1}{2} = \frac{3}{x-2}$, then the value of x equals $\dots\dots\dots$ (El-Obour - El-Kalyoubia 25)
 (a) 8 (b) 6 (c) 2 (d) 4

- 3 If $\frac{3}{2} = \frac{9}{b+1}$, then $\frac{1}{5}b = \dots\dots\dots$ (Rashid - El-Beheira 25)
 (a) 5 (b) 10 (c) 25 (d) 1

- 4 Which of the following represents proportionality ? (El-Gomrok - Alex. 25)
 (a) $\frac{3}{15} \stackrel{?}{=} \frac{2}{4}$ (b) $\frac{15}{35} \stackrel{?}{=} \frac{5}{7}$ (c) $\frac{15}{35} \stackrel{?}{=} \frac{3}{7}$ (d) $\frac{3}{9} \stackrel{?}{=} \frac{6}{12}$

- 5 The third proportional to the values : 2 , 5 , ... , 15 is $\dots\dots\dots$ (Abu El-Nomros - Giza 25)
 (a) 6 (b) 30 (c) 25 (d) 45

- 6 If the quantities : 3 , m , 15 , 10 are proportional , then $\dots\dots\dots$ (Basioun - El-Gharbia 25)
 (a) 3 (b) 6 (c) 4 (d) 2

- 7 If $b : 12 = 2 : 3$, then : $b = \dots\dots\dots$ (West Kafr-El Sheikh - Kafr El-Sheikh 25)
 (a) 6 (b) 8 (c) 5 (d) 14

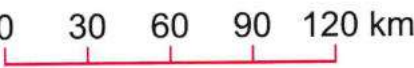
- 8 Which of the following pairs of ratios are not proportional ? (Sinnuris - Fayoum 25)
 (a) $\frac{1}{8}, \frac{4}{32}$ (b) $\frac{3}{2}, \frac{4}{9}$ (c) $\frac{1}{5}, \frac{16}{80}$ (d) $\frac{21}{42}, \frac{9}{18}$

- 9 The ratio $\frac{2}{5}$ is equal to the ratio $\dots\dots\dots$ (El-Montazah - Alex. 25)
 (a) $\frac{1}{10}$ (b) $\frac{4}{5}$ (c) $\frac{6}{15}$ (d) $\frac{3}{5}$

- 10 If the ratio is 8 : 3 equal to the ratio 16 : x , then $x = \dots\dots\dots$ (El-Maasara - Cairo 25)
 (a) 9 (b) 3 (c) 6 (d) 24

- 11 If $\frac{2}{y} = \frac{x}{6}$, then $\frac{1}{2}xy = \dots\dots\dots$ (El-Qanater - El-Kalyoubia 25)
 (a) 12 (b) 10 (c) 9 (d) 6

- 12 If $18k = 6m$, then $\frac{m}{k} = \dots\dots\dots$ (Samannoud - El-Gharbia 25)
 (a) $\frac{1}{3}$ (b) $\frac{1}{6}$ (c) 3 (d) 6
-
- 13 If the length in the drawing is 2 cm and the actual length is 6 metres, then the scale drawing is (Edfu - Aswan 25)
 (a) 1 : 3 (b) 1 : 30 (c) 1 : 3,000 (d) 1 : 300
-
- 14 On a map, every 1 cm. represents 5 km. If the distance between two villages is 25 km, then the distance between them on the map in centimetres is (Dar El-Salam - Souhag 25 / Qalin - Kafr El-Sheikh 25)
 (a) 3 (b) 5 (c) 10 (d) 15
-
- 15 A model of an aircraft is drawn to scale 1 : 1,000. If the length of the model in the drawing is 7.4 cm., then the real length of the aircraft is meters. (Maadi - Cairo 25)
 (a) 7,400 (b) 740 (c) 75 (d) 74
-
- 16 If a scale drawing > 1 , then it represents (El-Harm - Giza 25)
 (a) magnification. (b) minimization. (c) equality. (d) otherwise.
-
- 17 Which of the following scale drawings expresses magnification? (Manfalut - Assiut 25)
 (a) 1 : 700 (b) 7,000 : 1 (c) 1 : 500 (d) 1 : 7,000
-
- 18 Which of the following scale drawings expresses minimization? (Abu Kabir - El-Sharkia 25)
 (a) 20 : 1 (b) 1 : 2,000 (c) 200 : 1 (d) 2,000 : 1
-
- 19 Which of the following scale drawings means that every 1 centimeter in the drawing represents 6.5 km in reality? (Bandar Damanhour - El-Beheira 25)
 (a) 1 : 6,500,000 (b) 1 : 6.5 (c) 1 : 650,000 (d) 1 : 6,500
-
- 20 If the length of an insect is 0.4 mm and its length after magnification is 6 cm, what is the magnification ratio? (El-Manzala - El-Dakahlia 25 / Ihnasia - Beni Suef 25)
 (a) 1 : 15 (b) 15 : 1 (c) 1 : 150 (d) 150 : 1
-
- 21 If the scale of a map is 1 : 600,000, then each 1 cm. on the map represents km. (El-Khosous - El-Kalyoubia 25)
 (a) 0.6 (b) 6 (c) 60 (d) 600

- 22 If the scale of a map is  and the distance between two cities on the map is 2 cm, what is the actual distance between them ?
(West Shoubra El-Khema - El-Kalyoubia 25)
- (a) 30 km (b) 60 km (c) 60,000 cm (d) 1,200,000 cm
-
- 23 An amount of 1,600 pounds was divided between two people in the ratio of 3 : 5 , so the smaller share = pounds.
(Quesna - El-Monofia 25)
- (a) 200 (b) 600 (c) 1,000 (d) 800
-
- 24 A piece of land with an area of 63 feddan was divided between two people in a ratio 2 : 7 Which of the following is the share of one of them ?
(South - Ismailia 25)
- (a) 9 feddan. (b) 49 feddan. (c) 28 feddan. (d) 30 feddan.
-
- 25 The sum of two numbers is 264 and the ratio between them is 4 : 7 , so the larger number =
(Shibin El-Qanater - El-Kalyoubia 25)
- (a) 132 (b) 96 (c) 168 (d) 100
-
- 26 If the ratio between the lengths of two trees and is 3 : 5 , and the length of the shorter tree is 9 meters , then the length of the other tree is = meters.
(Samannoud - El-Gharbia 25)
- (a) 12 (b) 15 (c) 18 (d) 21
-
- 27 The ratio among the lengths of the sides of a triangle is 2 : 4 : 5 , if the length of the smallest side is 20 cm. , then the length of the longest side is = cm.
(Beni Ebeid - El-Dakahlia 25)
- (a) 10 (b) 20 (c) 30 (d) 50
-
- 28 If the price of a commodity decreases from 2,000 pound to 1,700 pound , what is the rate of reduction?
(Abu Tisht - Qena 25 / El-Khosous - El-Kalyoubia 25)
- (a) 10 % (b) 15 % (c) 20 % (d) 25 %
-
- 29 If the price of a blender increases from 700 LE to 840 LE , so the rate of increase is
(Bandar Kafr El-Dawwar - El-Beheira 25)
- (a) 10 % (b) 15 % (c) 18 % (d) 20 %
-
- 30 Ahmed bought a television for 18,000 pounds with a discount of 10 %. So the price before the discount was pounds.
(Agouza - Giza 25)
- (a) 19,000 (b) 17,000 (c) 20,000 (d) 1,000

- 31** Manar deposited an amount of 50,000 pounds in a bank with an annual interest rate of 18 % The total amount she will receive after one year of the deposit is pounds. *(Nabarow - El-Dakahlia 25)*
 (a) 9,000 (b) 59,000 (c) 41,000 (d) 68,000
-
- 32** $\{3\}$ $\{2, 3, 4, 6\}$ *(Middle Cairo - Cairo 25)*
 (a) $\not\subset$ (b) $\subset$ (c) $\in$ (d) $\notin$
-
- 33** 7 $\{5, 4, 7\}$ *(West Zagazig - El-Sharkia 25)*
 (a) $\subset$ (b) $\in$ (c) $\not\subset$ (d) $\notin$
-
- 34** $\{3\}$ $\{6, 2, 33\}$ *(Hosh Essa - El-Beheira 25)*
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
-
- 35** If the sets A and B are disjoint , then $A \cap B$ equals *(Shibin El-Qanatr - El-Kalyoubia 25)*
 (a) A (b) B (c) $\emptyset$ (d) Otherwise
-
- 36** $\emptyset$ $\{3, 4\}$ *(El-Qareen - El-Sharkia 25)*
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
-
- 37** Which of the following is a proper subset of the set $X = \{1, 3, 2, 5, 4\}$? *(East El-Mahalla - El-Gharbia 25)*
 (a) $\{3, 5, 9\}$ (b) $\{1, 5, 6\}$ (c) $\{1, 4, 2\}$ (d) $\emptyset$
-
- 38** If $A = \{3, 6, 5\}$, then the number of all subsets of A is equal to *(Hamoul - Kafr El-Sheikh 25)*
 (a) 4 (b) 6 (c) 8 (d) 16
-
- 39** The number of actual proper of the set $\{2, 5, 9\}$ is *(Abu El-Matamir - El-Beheira 25)*
 (a) 3 (b) 6 (c) 8 (d) 12
-
- 40** If $\{9, 8\} = \{8, 3, X\}$, then $X =$ *(El-Maasara - Cairo 25)*
 (a) 6 (b) 3 (c) 2 (d) 8
-
- 41** If $X \in \{2, 5\} \cap \{5, 7, 8\}$, then $X =$ *(El-Badrashin - Giza 25)*
 (a) 2 (b) 5 (c) 7 (d) 8

- 42** If the number of elements in $A \cap B$ is equal to 4, then the number of elements of A cannot be equal *(Dar El-Salam - Cairo 25)*
 (a) 3 (b) 4 (c) 5 (d) 6
-
- 43** If $A \subset B$, then $A \cap B = \dots\dots\dots$ *(Berket El-Sabaa - El-Monofia 25)*
 (a) $A \cup B$ (b) $\emptyset$ (c) B (d) A
-
- 44** If A, B are two non-empty sets, then $A \cap B \dots\dots\dots A$ *(East El-Mansoura - El-Dakahlia 25)*
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
-
- 45** If $B \subset A$ and $A = \{1, 3, 4\}$, which of the following could be set B ? *(Qus - Qena 25)*
 (a) $\{5, 3, 4\}$ (b) $\{2, 4\}$ (c) $\{1, 4\}$ (d) $\{1, 2, 4\}$
-
- 46** If $\{a, b - a\} = \{2, 4\}$, then $a + b$ could be *(Abu El-Nomros - Giza 25)*
 (a) 1 (b) 8 (c) 4 (d) 6
-
- 47** If $A = \{1, 2\}$, $B = \{3, 4\}$, then $A \cap B = \dots\dots\dots$ *(Shibin El-Kom - El-Monofia 25)*
 (a) $\{1, 2\}$ (b) $\{3, 4\}$ (c) $\{1, 2, 3, 4\}$ (d) $\emptyset$
-
- 48** $-5 + (-3) = \dots\dots\dots$ *(El-Basatin - Cairo 25)*
 (a) -2 (b) 2 (c) -8 (d) 8
-
- 49** $-3 - (-2) = \dots\dots\dots$ *(Qalyub - El-Kalyoubia 25)*
 (a) -5 (b) -1 (c) 1 (d) 5
-
- 50** If $H = (-6)$, $K = 2$, then $K + (-H) = \dots\dots\dots$ *(El-Bagour - El-Monofia 25)*
 (a) 1 (b) -1 (c) 8 (d) -8
-
- 51** Which of the following is equivalent to the operation of subtraction: $8 - (-4)$? *(Supervision - Suez 25)*
 (a) $8 - 4$ (b) $4 - 8$ (c) $8 + 4$ (d) $-8 - 4$
-
- 52** Which of the following addition results in a negative sign? *(El-Hamoul - Kafr El-Sheikh 25)*
 (a) $2 + 3$ (b) $(-6) + 9$ (c) $(-4) + 1$ (d) $(-8) + 8$
-
- 53** The neutral element of addition in $\mathbb{Z}$ is *(Kafr Saad - Damietta 25)*
 (a) 0 (b) -1 (c) 1 (d) 2

- 54 $(-5) \times (-2) = \dots\dots\dots$ (Supervision - Ismailia 25)
 (a) 10 (b) -10 (c) 3 (d) -3
-
- 55 Which of the following is equal to (-5) ? (Assiut - Assiut 25)
 (a) $-25 \div (-5)$ (b) $-25 \div 5$ (c) $1 \div (1 - 5)$ (d) $0 \div (-5)$
-
- 56 Which of the following multiplication results a negative sign ? (Qus - Qena 25)
 (a) $-3 \times (-5)$ (b) -1×5 (c) -5×0 (d) $|-1| \times |3|$
-
- 57 The additive inverse of the number $|-3|$ is $\dots\dots\dots$ (Samasta - Beni Suef 25)
 (a) 4 (b) -3 (c) 3 (d) 5
-
- 58 If $x = |-5|$, $y = -4$, then $x + y = \dots\dots\dots$ (Ibshaway - El-Fayoum 25)
 (a) -9 (b) 9 (c) 1 (d) -1
-
- 59 The additive inverse of the number -2 is $\dots\dots\dots$ (Matay - El-Menia 25)
 (a) 3 (b) -3 (c) 2 (d) -2
-
- 60 Which of the following sum results a positive sign? (Monof - El-Monofia 25)
 (a) $5 + (-5)$ (b) $6 + (-7)$ (c) $(-5) + (-5)$ (d) $(-4) + 5$
-
- 61 If $a = 3$, $b = -1$, $c = 2$, then $ab - 5c = \dots\dots\dots$ (El-Dalangat - El-Beheira 25)
 (a) -19 (b) -13 (c) 2 (d) 1
-
- 62 The multiplicative identity in $\mathbb{Q}$ is $\dots\dots\dots$ (El-Obour - El-Kalyoubia 25)
 (a) 1 (b) -1 (c) $\frac{1}{2}$ (d) 0
-
- 63 $2\frac{1}{4} = \dots\dots\dots\%$ (El-Khanka - El-Kalyoubia 25)
 (a) 25 (b) 225 (c) 200 (d) $\frac{9}{4}$
-
- 64 If $1 = \frac{7}{2} \times a$, then $a = \dots\dots\dots$ (Motoubs - Kafr El-Sheikh 25)
 (a) $\frac{7}{2}$ (b) $3\frac{1}{2}$ (c) $-\frac{2}{7}$ (d) $\frac{2}{7}$
-
- 65 The multiplicative inverse of the number 0.7 is $\dots\dots\dots$ (Dar El-Salam - Souhag 25)
 (a) $\frac{7}{10}$ (b) $\frac{10}{7}$ (c) $\frac{9}{7}$ (d) $\frac{7}{9}$
-
- 66 The multiplicative inverse of $-\frac{7}{5}$ is $\dots\dots\dots$ (Bulaq El-Dakrour - Giza 25)
 (a) $\frac{5}{7}$ (b) 1 (c) $-\frac{5}{7}$ (d) $\frac{7}{5}$

- 67** The multiplicative inverse of the number $-\frac{3}{4}$ is *(Ashmoun - El-Monofia 25)*
 (a) $-\frac{4}{3}$ (b) $\frac{3}{4}$ (c) $\frac{4}{3}$ (d) $-\frac{3}{4}$
-
- 68** The additive inverse of the number $\frac{-7}{3}$ is *(El-Fashn - Beni Suef 25)*
 (a) $-\frac{7}{3}$ (b) $-\frac{3}{7}$ (c) $\frac{7}{3}$ (d) $\frac{3}{7}$
-
- 69** The multiplicative inverse of the number 0.5 is *(North - Giza 25)*
 (a) $-\frac{5}{9}$ (b) $\frac{5}{9}$ (c) $1\frac{4}{5}$ (d) 2
-
- 70** Which of the following is equal to $\frac{3}{5} + \frac{-2}{3}$? *(South - Ismailia 25)*
 (a) $\frac{1}{8}$ (b) $\frac{1}{15}$ (c) $-\frac{6}{15}$ (d) $-\frac{1}{15}$
-
- 71** The remainder of subtracting $\frac{1}{4}$ from $\frac{5}{8}$ *(El-Adwa - El-Menia 25)*
 (a) $\frac{2}{8}$ (b) $\frac{3}{8}$ (c) $\frac{5}{8}$ (d) $\frac{1}{2}$
-
- 72** $2\frac{3}{5} + \frac{1}{2} =$ *(El-Qanater El-Khayriya - El-Kalyoubia 25)*
 (a) 2 (b) $\frac{3}{13}$ (c) 3.1 (d) 1
-
- 73** $\frac{4}{9} \times 16 + \frac{4}{9} \times 11 =$ *(El-Mansha - Souhag 25)*
 (a) 8 (b) 12 (c) 27 (d) 36
-
- 74** If $\frac{a}{2} = 0.5$ What is the value of $|9a - 5|$? *(Nasser - Beni Suef 25)*
 (a) 5 (b) -5 (c) 0 (d) 10

Second Essay questions

- 1** Find the value of x if : $\frac{16}{x} = \frac{8}{12}$ *(El-Badrashin - Giza 25)*
-
- 2** If $\frac{d-1}{4} = \frac{5}{2}$ Find : the value of d . *(El-Sahel - Cairo 25)*
-
- 3** A car travels a distance of 176 km consuming 8 litres of petrol. What distance does the car travel with a full tank if the tank capacity is 14 litres ? *(Farshout - Qena 25)*
-
- 4** A factory produces 1,500 light bulbs in 3 hours. Calculate the factory's production in 2 hours. *(Abu Qurqas - El-Menia 25)*
-
- 5** If the distance between two cities on a map is 5 cm , and the real distance between them is 30 km. Find the scale drawing of the map. *(El-Tall El-Kabir - Ismailia 25)*

- 6 A picture shows a butterfly whose real length is 3 cm if its length in the picture is 3 meters. Find the scale drawing. *(East - Alex. 25)*

- 7 If the scale drawing of a map is 1 : 600,000 and the distance between two cities on the map is 4.5 cm , find the real distance between them in kilometres. *(Khanka - El-Kalyoubia 25 / Rashid - El-Beheira 25 / Matay - El-Menia 25)*

- 8 If the scale drawing of a map is 1 : 300,000 and the real distance between two cities is 18,000 meters , find the distance between the two cities on the map. *(Quesna - El-Monofia 25)*

- 9 If the distance between two cities is 24 km , find the distance between them in centimeters on a map drawn to scale 1 : 400,000 *(Mit Salsil - El-Dakahlia 25)*

- 10 If the magnification ratio of an insect image is 30 : 1 and the real length of the insect is 2.5 cm. Find the length of the insect in the image in centimeters. *(El-Gomrok - Alex. 25)*

- 11 A map is drawn to the opposite scale drawing.
If the distance between two cities on the map is 5 cm , find the actual distance between the two cities in kilometers.



(Bander Kafr El-Dawar - El-Beheira 25)

- 12 An amount of money 960 pounds was divided between two people in the ratio of 5 : 7
Find the share of each person. *(Deirb Najm - El-Sharkia 25)*

- 13 Divide the amount of 850 pounds between Ahmed and Sharif in the ratio of 3 : 2
Find Sharif's share *(Abu Kabir - El-Sharkia 25)*

- 14 The ratio between two numbers is 2 : 3 , and the larger number is 18
Find the smaller number. *(Kafr El-Zayat - El-Gharbia 25)*

- 15 A piece of land with an area of 63 feddans was divided between two people in the ratio of 4 : 5
Find the greater share. *(Qalyub - El-Kalyoubia 25)*

- 16 A school has a number of 450 students. If the ratio of boys to girls is 2 : 3
Find the number of girls in the school. *(El-Qusiya - Assiut 25)*

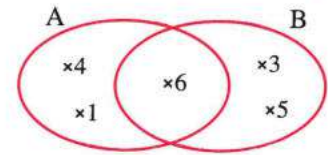
- 17 Two people divided an amount of money between them in the ratio of 2 : 7
The second person's share was 500 pounds more than the first person's share.
Find the value of the total amount. *(West Beni Suef - Beni Suef 25)*

- 18 Two friends participated in a commercial business in the ratio of 5 : 2. If the greater share of the profits is 20,000 pounds , what is the total profit ? *(El-Rahmaniyah - El-Beheira 25)*
-
- 19 Divide the amount of money 8,400 pounds among three people in the ratio of 3 : 4 : 5
Find the share of each person. *(Fakous - El-Sharkia 25)*
-
- 20 Three people participated in a business with a capital of 75,000 pound in the ratio of 4 : 5 : 6
Calculate how much money each person paid. *(Ibshaway - El-Fayoum 25)*
-
- 21 If the ratio between the lengths of the sides of a triangle with a perimeter of 60 cm is 5 : 3 : 4
find the length of the smallest side of the triangle. *(Dar El-Salam - Cairo 25)*
-
- 22 Three people shared in a business. The first paid 30,000 , the second paid 40,000 , and the third paid 10,000. At the end of the year , the profits was 24,000 pounds.
Find each person's share of the profits. *(El-Basatin - Cairo 25)*
-
- 23 If the price of a dress is 460 pound , and during the sales season a 15 % discount is applied to the original price of the dress , what is the sale price after the discount ? *(Shibin El-Kom - El-Monofia 25)*
-
- 24 Maryam bought a vacuum cleaner for 4,800 pound. If the discount rate is 15 %
Calculate the price of the vacuum cleaner after the discount. *(El-Maasara - Cairo 25)*
-
- 25 Ahmed got a discount 10 % on the price of a bag from a store and paid 450 pounds.
What is the original price of the bag ? *(El-Qanater El-Khayriya - El-Kalyoubia 25)*
-
- 26 A man bought goods for 28,000 pounds and sold them at a profit 15 % . What is the selling price after adding the profit? *(Qaleen - Kafr El-Sheikh 25 / Dar El-Salam - Souhag 25)*
-
- 27 If 13,500 tourists represent 12% of the total number of tourists , find the total number of tourists. *(Bandar Damanhour - El-Beheira 25)*
-
- 28 Mary wants to subscribe to home internet service for 500 pounds per month , plus 14 % tax applied to the service price. What is the tax and the amount Mary pays each month? *(Borg El-Arab - Alex. 25)*
-
- 29 If $\{3, 1, x\} = \{5, y, 3\}$ Find the value of : $x + y$ *(El-Nozha - Cairo 25)*

30 Using the given Venn diagram , write the following in listing form :

(West Nasr City - Cairo 25)

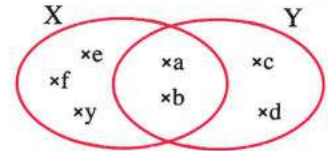
- ① A ② B
③ $A \cup B$ ④ $A \cap B$



31 From the given Venn diagram , find :

(Quesna - El-Monofia 25)

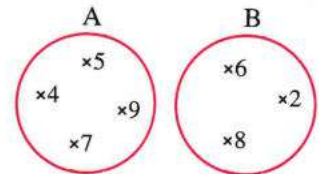
- ① X ② Y
③ $X \cap Y$ ④ $X \cup Y$



32 From the given Venn diagram :

(El-Sinnbalaween - El-Dakahlia 25)

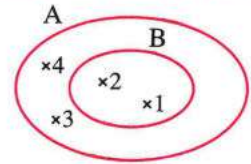
Find using the listing method : A , B , $A \cap B$



33 From the given figure , find :

(West El-Mahalla - El-Gharbia 25)

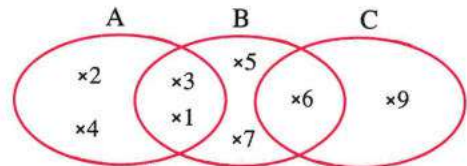
- ① $A \cap B$
② $A \cup B$



34 From the given Venn diagram :

(El-Waily - Cairo 25)

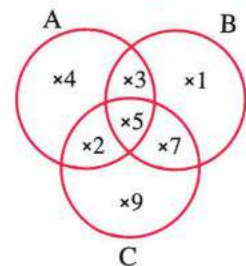
Find : $A \cap C$, $B \cup C$



35 From the given Venn diagram , find :

(El-Zarka - Damietta 25 / Farshout - Qena 25)

- ① $A \cap B$
② $A \cup C$
③ $A \cap B \cap C$



36 If $A = \{1, 5, 3, 7\}$, $B = \{1, 2, 5, 9\}$

Find : $A \cup B$, $A \cap B$

(El-Sahel - Cairo 25 / Qalyub - El-Kalyoubia 25)

37 If $A = \{1, 3\}$, $B = \{x : x \in \mathbb{N}, x < 2\}$ Find :

(Nasr - Beni Suef 25)

- ① $A \cap B$ ② $A \cup B$ ③ The number of all subsets of set A.

38 If $A = \{2, 4\}$, $B = \{2, 3, 5\}$ Find :

① The number of all subsets of set B

② $A \cap B$

③ $A \cup B$

(El-Qanater El-Khayriya - El-Kalyoubia 25)

39 If $A = \{a, b, c\}$, $B = \{d, a, c\}$

Draw a Venn diagram , then find each of the following :

(Fakous - El-Sharkia 25)

① $A \cap B$

② $A \cup B$

40 If $A = \{3, 4, 7, 8\}$, $B = \{3, 5, 7\}$

Represent the two sets using Venn diagram , then find :

(El-Omrana - Giza 25)

① $A \cap B$

② $A \cup B$

41 Use the properties of addition to find the sum of each of the following :

① $-6 + (-13) + 6$

(Bandar Damanhour - El-Beheira 25)

② $(-12) + 25 + (-13)$

(El-Tall El-Kabir - Ismailia 25)

③ $\left(-\frac{7}{4}\right) + \frac{2}{5} + \frac{7}{4}$

(Motoubas - Kafr El-Sheikh 25)

④ $\frac{2}{5} - \frac{3}{4} + \frac{3}{5} + \frac{-1}{4}$

(Kafr Saad - Damietta 25)

⑤ $\left(\frac{-4}{10}\right) + \frac{1}{4} + \frac{2}{10} + \left(\frac{-1}{4}\right)$

(El-Dalangat - El-Beheira 25)

⑥ $\frac{-3}{8} + \frac{1}{5} + \frac{-5}{8} + \frac{9}{5}$

(Tukh - El-Kalyoubia 25)

42 Use the properties of multiplication in $\mathbb{Z}$ to find the product of each of the following :

① $4 \times (-12) \times 25$

(Shoubra - Cairo 25)

② $-4 \times (-19) \times 25$

(Ashmoun - El-Monofia 25)

43 Use the properties of addition in $\mathbb{Z}$ to find the sum of each of the following :

① $15 \times 65 - 15 \times 35$

(West Zagzig - El-Sharkia 25)

② $2 \times 8 - 8 + 8 \times 9$

(Manfalut - Assuit 25)

③ $3 \times (-2) + 3 \times 5$

(Akhmim - Souhag 25)

④ $\frac{5}{7} \times 8 + \frac{5}{7} \times 6$

(Mallawi - El-Menia 25)

⑤ $\frac{7}{12} \times 13 - \frac{7}{12}$

(Abu El-Matamir - El-Beheira 25)

⑥ $\frac{5}{17} \times 20 - \frac{5}{17} \times 7 + \frac{5}{17} \times 21$

(Atfih - Giza 25)

⑦ $6 \times \frac{3}{11} + 4 \times \frac{3}{11} + \frac{3}{11}$

(Saqalta - Souhag 25)

⑧ $\frac{1}{2} \times 13 + \frac{1}{2} \times 8 - \frac{1}{2}$

(East Mansoura - El-Dakahlia 25)

⑨ $\left(-\frac{4}{9}\right) \times 8 + 9 \times \left(-\frac{4}{9}\right) + \left(-\frac{4}{9}\right)$

(Tala - El-Monofia 25)

44 Use the result of each of the following :

① $\left(\frac{1}{4}\right) + \left(\frac{-1}{3}\right)$

(Aswan - Aswan 25)

② $-\frac{3}{2} + \frac{13}{5}$

(West Shoubra El-Kheima - El-Kalyoubia 25)

③ $0.28 - \frac{4}{25}$

(Shibin El-Kom - El-Monofia 25)

④ $\left(\frac{-3}{5}\right) \times (-0.8\bar{3})$

(Aswan - Aswan 25)

⑤ $\frac{5}{27} \div \frac{1}{9}$

(Zafta - El-Gharbia 25)

⑥ $-\frac{4}{5} \div 3\frac{1}{5}$

(Edfu - Aswan 25)

⑦ $-3\frac{3}{4} \div \left(-2\frac{1}{4}\right)$

(Assiut - Assiut 25)

⑧ $\left(\frac{9}{7} + \left|\frac{-1}{7}\right|\right) \div \frac{4}{14}$

(West - Alex. 25)

⑨ $\left[\frac{-5}{12} - \left(-\frac{7}{6}\right)\right] \div \frac{3}{4}$

(Qus - Qena 25)

45 If $a = 20$, $b = -30$ Find the result of each of the following : (Berket El-Sabaa - El-Monofia 25)

① $a - b$

② $a \times b$

③ $a + b$

46 If $a = 10$, $b = -5$ Find the result of : $b - (-a)$ (Kafr Saad - Damietta 25)

47 If $a = 15$, $b = -5$ Find the value of : $|a \div b|$ (Kom Ambo - Aswan 25)

48 If $a = 2$, $b = -1$, $c = -5$

Find the numerical value of the expression : $2a + b - c$ (Shubrakhit - El-Beheira 25)

49 If $x = 5$, $y = 3$

Find the numerical value of the expression : $y(x + y)$ (Qaha - El-Kalyoubia 25)

50 If $a = 5$, $b = -4$, $c = 2$

Find the result of each of the following in its simplest form : (El-Montazah - Alex. 25)

① $(a \times b) \div c$

② $a - b + c$

51 If $x = \frac{7}{4}$, $y = \frac{2}{5}$, $z = \frac{-7}{4}$

Find in simplest form , the value of the expression : $(x + z) \div y$ (Rashid - El-Beheira 25)

52 If $y = \frac{1}{3}$, $x = \frac{5}{9}$

Find the numerical value of the expression : $\frac{x + y}{x - y}$ (Ihnaasia - Beni Suef 25)

Important questions on unit two from the directorates' exams



First multiple choice questions

- 1 The coefficient of the algebraic term x^2 is (Deir Mawas - El-Menia 25)
(a) 0 (b) 1 (c) 2 (d) 3
- 2 The coefficient of the algebraic term $-2xy^3$ is (El-Waily - Cairo 25)
(a) -2 (b) 3 (c) 2 (d) -6
- 3 Which of the following represents two similar algebraic terms ? (Shibin El-Kom - El-Monofia 25)
(a) x^2, y^2 (b) $7m, 7$ (c) $3b, 8b$ (d) $2a, -2a^2$
- 4 Which of the following are two similar algebraic terms ? (El-Rahmaniyah - El-Beheira 25)
(a) $5x^2y, 7yx^2$ (b) $5x, 5$ (c) $13a^2, 7a^3$ (d) $3x, -7x^2$
- 5 The constant term in the expression : $4x + 3y - 8$ is (Shoubra - Cairo 25)
(a) 3 (b) 4 (c) -8 (d) 16
- 6 How many terms are there in the expression : $abc - 8$? (Manfalut - Assiut 25)
(a) 1 (b) 2 (c) 3 (d) 4
- 7 In the expression : $4x - 6y + 7xy - 8$, the coefficient of y is (Luxor - Luxor 25)
(a) 6 (b) 7 (c) 8 (d) -6
- 8 What is the algebraic expression representing 5 is added to twice the number x ? (Akhmim - Souhag 25)
(a) $x - 5$ (b) $2x - 5$ (c) $2x + 5$ (d) $x + 5$
- 9 Youssef has x pounds and his father gave him five pounds. Which mathematical expression expresses what Youssef has ? (Kafr Saad - Damietta 25)
(a) 5 (b) $x + 5$ (c) $x - 5$ (d) $5x$
- 10 What is the inequality representing the set of integers less than or equal to 3 ? (El-Khosous - El-Kalyoubia 25)
(a) $x < 3$ (b) $x \leq 3$ (c) $x > 3$ (d) $x \geq 3$

11 Ahmed's age is now x years old. What is the mathematical expression for Ahmed's age after 9 years ? (South - Ismailia 25)

- (a) $x + 9$ (b) $x - 9$ (c) $18 - x$ (d) $18 + x$

12 Heba is now x years old. Her age before 9 years was years. (El-Qassasin - Ismailia 25)

- (a) $x \div 9$ (b) $x - 9$ (c) $x + 9$ (d) $9x$

13 Two consecutive natural numbers , if the first number is $x - 2$, then the next number is (El-Khanka - El-Kalyoubia 25)

- (a) x (b) $x - 1$ (c) $1 + x$ (d) $2 + x$

14 The mathematical expression : $6x = 7$ represents (El-Mansha - Souhag 25)

- (a) An inequality. (b) An equation.
(c) An algebraic expression. (d) A numerical expression.

15 $5a + a =$ (Saqalta - Souhag 25)

- (a) $6a$ (b) $-6a$ (c) $4a$ (d) $-4a$

16 Which of the following is equal to $8y$? (El-Agmy - Alex. 25)

- (a) $5 + 3y$ (b) $3 + 5y$ (c) $8 + y$ (d) $3y + 5y$

17 A rectangle with length of $5x$ cm and width of $2x$ cm has a perimeter of cm. (El-Qusaiya - Assiut 25)

- (a) $7x$ (b) $14x$ (c) $10x$ (d) $10x^2$

18 The quantity represented by the number 10 subtracted from x is (El-Hawamdiya - Giza 25)

- (a) $10 - 5x$ (b) $x - 10$ (c) $5x - 10$ (d) $10 - x$

19 What is the mathematical expression that represents the subtraction (-2) from x ? (El-Zarka - Damietta 25)

- (a) $x - 2$ (b) $2 - x$ (c) $-2 - x$ (d) $x + 2$

20 If x is greater than -5 , then the mathematical expression represents this is (Fayed - Ismailia 25)

- (a) -4 (b) 4 (c) $x - 5$ (d) $x + 5$

- 21** The result of the addition of $-5x$, $3x$ is *(Ashmoun - El-Monofia 25)*
 (a) $-2x$ (b) $2x$ (c) $-8x$ (d) $8x$
-
- 22** The rest of the subtraction $5x$ from $7x$ equals *(New Cairo - Cairo 25)*
 (a) $2x$ (b) $12x$ (c) $-2x$ (d) $-12x$
-
- 23** The result of subtracting $3a$ from a is *(Abu El-Nomros - Giza 25)*
 (a) $-2a$ (b) $2a$ (c) a^2 (d) $4a$
-
- 24** The result of the subtraction $(-7a)$ from $(3a)$ is *(East Mansoura - El-Dakahlia 25)*
 (a) $4a$ (b) $-4a$ (c) $-10a$ (d) $10a$
-
- 25** What is the increase of $7x$ than $2x$? *(Ibrahimia - El-Sharkia 25)*
 (a) $9x$ (b) $5x$ (c) $-5x$ (d) x
-
- 26** The algebraic term : $-5x$ exceeds the algebraic term : $-11x$ by *(North Giza - Giza 25)*
 (a) $-16x$ (b) $6x$ (c) $-6x$ (d) $16x$
-
- 27** What is the algebraic expression that is equivalent to the following expression?
 $2x - 3 - 4x + 1$ *(Qalyub - El-Kalyoubia 25 / Bandar Damanhour - El-Beheira 25)*
 (a) $2x - 2$ (b) $-2x + 2$ (c) $-6x - 4$ (d) $-2 - 2x$
-
- 28** The simplest form of the expression : $a + a + b + a + b$ is *(Borg El-Arab - Alexandria 25)*
 (a) 5 (b) $2b + 3a$ (c) $2a + 3b$ (d) $5ab$
-
- 29** The simplest form of the expression : $2x + 5y + x - 5y$ is *(Esna - Luxor 25)*
 (a) $3x$ (b) $10y$ (c) $3x + 10y$ (d) $3x - 10y$
-
- 30** The result of adding the two expressions : $4x + 6$, $3x - 2$ is *(Manshaat El-Qanater - Giza 25 / Itai El-Baroud - El-Beheira 25)*
 (a) $7x + 8$ (b) $7x + 4$ (c) $-x + 4$ (d) $-x - 4$
-
- 31** The sum of the two expressions : $-3x + 5$, $2x - 3$ is *(Tala - El-Monofia 25)*
 (a) $-5x + 2$ (b) $2 - x$ (c) $2 + x$ (d) $x - 2$
-
- 32** A rectangle has a perimeter of 24 cm. If its length is m cm, then its width is cm. *(Kom Ambo - Aswan 25)*
 (a) $m - 12$ (b) $12 - m$ (c) $12 + m$ (d) $12m$

- 33** Which of the following expresses twice the number x plus 3 is equals to 7 ?
(Menouf - El-Monofia 25)
(a) $x + 3 = 7$ (b) $2x + 3 = 7$ (c) $3x + 2 = 7$ (d) $2x + 7 = 3$
-
- 34** Ziad is now x year old , and seven years ago he was 18 year old. Which of the following equations expresses the previous situation ?
(Qaleen - Kafr El-Sheikh 25)
(a) $x + 18 = 7$ (b) $x - 7 = 18$ (c) $x + 7 = 18$ (d) $x = 18$
-
- 35** Two consecutive odd numbers add up to 28. Which of the following equations expresses this ?
(Ihnasia - Beni Suef 25)
(a) $x + x + 1 = 28$ (b) $2x + 1 = 28$ (c) $2x - 1 = 28$ (d) $2x + 2 = 28$
-
- 36** If $-7k = 28$, then $k + 6 = \dots\dots\dots$
(El-Gomrok - Alex. 25)
(a) -2 (b) 2 (c) 6 (d) -6
-
- 37** If $3x - 2 = 4$, then $5x = \dots\dots\dots$
(Facous - El-Sharkia 25)
(a) 1 (b) -8 (c) 10 (d) 12
-
- 38** If $(x - 1)$ is the multiplicative inverse of the number $\frac{1}{5}$, then $x = \dots\dots\dots$ (Farshout - Qena 25)
(a) 6 (b) 4 (c) 5 (d) $1\frac{1}{5}$
-
- 39** If $\frac{x}{5}$ is the largest negative integer , then $x + 5 = \dots\dots\dots$ (Kaha - El-Kalyoubia 25)
(a) -3 (b) -1 (c) 0 (d) 3
-
- 40** If the substitution set is $\{1, 4, 2\}$, then the solution set of the equation $2x = 10$ is
(El-Badrashin - Giza 25)
(a) $\{5\}$ (b) $\{2\}$ (c) $\{1\}$ (d) $\emptyset$
-
- 41** The solution set in $\mathbb{N}$ of the equation $3x - 1 = 10$ is
(Qattour - El-Gharbia 25)
(a) $\{3\}$ (b) $\{4\}$ (c) $\{5\}$ (d) $\emptyset$
-
- 42** Which of the following equations is equivalent to the equation : $2n + 1 = \frac{3}{2}$?
(Samasta - Beni Suef 25)
(a) $n + 2 = 6$ (b) $2n = 4$ (c) $8n = 2$ (d) $n - 2 = 1$
-
- 43** Which of the following equations is not equivalent to the equation : $3x - 1 = 8$?
(Farshout - Qena 25)
(a) $3x - 2 = 7$ (b) $x + 1 = 4$ (c) $5x = 5$ (d) $x - 1 = 2$

- 44** The solution set of the equation: $3x - 1 = 6$ in $\mathbb{Z}$ is *(Rashid - El-Beheira 25)*
 (a) $\{2\}$ (b) $\emptyset$ (c) $\{\frac{7}{3}\}$ (d) $\{-2\}$
-
- 45** Which of the following equations has no solution in $\mathbb{Z}$? *(El-Warrak - Giza 25)*
 (a) $3x = 6$ (b) $3x = 15$ (c) $3x = 16$ (d) $3x = 21$
-
- 46** The length of the base of a parallelogram is 15 cm and its corresponding height is $(2x + 3)$ cm, if its area is 135 square centimeters. , then $x =$ *(Qaleen - Kafr El-Sheikh 25)*
 (a) 2 (b) 3 (c) 4 (d) 5

Second Essay questions

1 Write the following algebraic expressions in their simplest form :

- ① $3x + 2y + 5x - 2y + 4$ *(Matay - El-Menia 25)*
 ② $3x - 2y - y + x$
 Then find the value of the expression when : $x = 3$, $y = 1$ *(Fayed - Ismailia 25)*
 ③ $2(n - 3m) - 3(2n + m)$ *(El-Khanka - El-Kalyoubia 25)*
 ④ $3(x - 7) - 5(2x - 5)$ *(Sars El-Layan - El-Monofia 25)*
 ⑤ $3(a - 2b) - 2(a + b)$
 Then find the value of the expression when : $a = 5$, $b = -1$ *(Atfih - Giza 25)*

2 Find the sum of each of the following :

- ① $2a - 3b + 10$, $3a + 5b - 7$ *(New Cairo - Cairo 25)*
 ② $a + 2b + 5$, $3a - 2b - 8$ *(Kom Ambo - Aswan 25)*
 ③ $6a + 4b - c$, $2a - 3b + 5c$ *(Fakous - El-Sharkia 25)*
 ④ $-m + 9n - k$, $-3m - 12n + k$ *(Abu Qurqas - El-Menia 25)*
 ⑤ $4x^2 - 3x + 5$, $x^2 - 7x - 8$ *(North Giza - Giza 25)*
 ⑥ $3b - 7a + 8$, $4a + b - 4$, $3a - 2b + 1$ *(El-Agouza - Giza 25)*
 ⑦ $2a - 5b - 3$, $2b + 3a$, then find the numerical value of the result when:
 $a = 3$, $b = 2$ *(Shibin El-Kom - El-Monofia 25)*

3 Find the difference in each of the following :

- ① $4x - 5y + 7$ from $7x + 3y + 2$ *(El-Maasara - Cairo 25)*
 ② $2a - 5b + 3w$ from $2a - 5b - w$ *(Badrashin - Giza 25)*

4 What is the increase of the expression : $3x - 6y + 4$ than the expression : $3x + y - 3$?

(El-Kareem - El-Sharkia 25)

5 What is the decrease of the expression : $x + 2y - 3z$ than the expression : $3y - 3z + 10x$?
(Rashid - El-Beheira 25)

6 If the sum of two expressions is : $7x - 3y + 5z$ and one of these expression is : $2y - 3x + z$ find the other expression.
(Ihnasia - Beni Suef 25)

7 Find the solution set of the equation : $3x - 6 = 18$ if the substitutions set is $\{6, 7, 8\}$
(South - Ismailia 25)

8 Find the solution set of each of the following equations in $\mathbb{N}$:

① $3x + 4 = 10$

(El-Harm - Giza 25)

② $5x - 10 = 5$

(Ibrahimia - El-Sharkia 25)

③ $-3 + 4x = 7$

(Kafr Saad - Damietta 25)

④ $3x + 5 = 2$

(Dayroot - Assiut 25)

⑤ $2(3y - 1) = 10$

(Damanshour - El-Beheira 25)

⑥ $3(x - 2) = -8$

(Manfalut - Assiut 25)

⑦ $7 = 2(x + 3)$

(Sidi Salem - Kafr El-Sheikh 25)

9 Find a solution set of each of the following equations in $\mathbb{Z}$:

① $3x + 11 = 2$

(El-Montazah - Alex. 25)

② $5x + 7 = 37$

(East El-Mahalla - El-Gharbia 25)

③ $3x - 5 = 7$

(El-Santa - El-Gharbia 25)

④ $2x - 3 = -15$

(West Kafr El-Sheikh - Kafr El-Sheikh 25)

⑤ $5(x + 7) = 80$

(Samasta - Beni Suef 25)

⑥ $3(2x - 1) = 27$

(Samannoud - El-Gharbia 25)

10 Find the solution set of the following equations in $\mathbb{Q}$:

① $3x + 7 = 22$

(Adwa - El-Menia 25)

② $5 + 2x = 15$

(Mit Salsil - El-Dakahlia 25)

③ $5x - 9 = 11$

(Dar El-Salam - Souhag 25)

④ $2x - 5 = -2$

(El-Zarka - Damietta 25)

⑤ $\frac{2}{5}x + 1 = 3$

(El-Manzala - El-Dakahlia 25)

⑥ $2(x + 3) = 36$

(El-Khosous - El-Kalyoubia 25)

⑦ $3(2x - 3) = 9$

(Ibshaway - El-Fayoum 25)

⑧ $3(x - 5) = -18$

(El-Qareen - El-Sharkia 25)

11 Find the solution set of the following equations in $\mathbb{Q}$:

① $5x + 3 = 12 + 2x$

(Adfu - Aswan 25)

② $3x + 2 = x + 10$

(Esna - Luxor 25)

③ $2(x + 3) = 1 + x$

(Abu El-Matamir - El-Beheira 25)

④ $2(x + 4) = 5x - 1$

(Atfih - Giza 25)

12 If $5k = 20$, what is the value of : $3k + 1$?

(El-Bagour - El-Monofia 25)

13 Three consecutive numbers their sum is 123 Find these numbers in steps.

(Quesna - El-Monofia 25)

14 Three consecutive even numbers their sum is 84 Find these numbers.

(Nabarow - El-Dakahlia 25)

15 Two natural numbers , one of them is three times the other , and their sum is 48
Find the two numbers.

(El-Sinnblawein - El-Dakahlia 25)

16 If Tamer now is 4 times Khalid's age , and the sum of their ages is 50 year.
How old is Tamer now ?

(El-Tall El-Kabir - Ismailia 25)

17 If the length of a rectangle is twice as its width , if the perimeter of the rectangle is 30 cm.
Calculate its area.

(El-Agouza - Giza 25)

Important questions on unit three from the directorates' exams



First Multiple choice questions

- 1 The angle of measure $89^\circ 60'$ is angle. (Dayroot - Assiut 25)
(a) An acute (b) An obtuse (c) a right (d) a reflex
-
- 2 The two angles are two angles that lie in the same plane , have a common vertex and a common side , and the other two sides lie on two different sides of the common side. (South - Ismailia 25)
(a) alternate angles. (b) vertically opposite angles.
(c) adjacent angles. (d) congruent angles.
-
- 3 The sum of the measures of the two complementary angles is equal to the measure of the (El-Menia - El-Menia 25)
(a) right angle. (b) straight angle. (c) acute angle. (d) reflex angle.
-
- 4 If $m(\angle A) = 70^\circ$, $\angle A$ is complements $\angle B$ then the measurement of $\angle B =$ (Mallawy - El-Menia 25)
(a) 20° (b) 70° (c) 110° (d) 290°
-
- 5 If two complementary angles are equal in measure , then the measure of each angle is equal to (Fakous - El-Sharkia 25)
(a) 90° (b) 45° (c) 180° (d) 80°
-
- 6 What type of angles does complement a right angle ? (Abu Tesht - Qena 25)
(a) Acute. (b) Obtuse. (c) Zero (d) Reflected.
-
- 7 The angle that complements an acute angle is (East El-Mahalla - El-Gharbia 25)
(a) a right. (b) an obtuse. (c) a straight. (d) an acute.
-
- 8 If the ratio between the measures of two complementary angles is $2 : 3$, then the measure of the greater angle is (Bandar Damanhur - El-Beheira 25)
(a) 45° (b) 90° (c) 54° (d) 36°
-
- 9 If $\angle A$ and $\angle B$ are two supplementary angles and $m(\angle A) = 40^\circ$, then $m(\angle B) =$ (Aswan - Aswan 25)
(a) 40° (b) 50° (c) 90° (d) 140°

10 What is the type of the angle that supplements a right angle ?

(Dar El-Salam - Cairo 25 , West Shoubra El-Kheima - El-Kalyoubia 25)

- (a) Right angle. (b) Obtuse angle.
(c) Zero angle. (d) Straight angle.
-

11 The acute angle supplements angle.

(El-Sinnblawein - El-Dakahlia 25)

- (a) zero (b) the right (c) the straight (d) the obtuse
-

12 What type of angles supplements a zero angle ?

(West El-Mahalla - El-Gharbia 25)

- (a) Acute. (b) Obtuse. (c) Straight. (d) Right.
-

13 The angle that supplements an obtuse angle is angle.

(Ihnasia - Beni Suef 25)

- (a) an acute (b) a right (c) an obtuse (d) zero
-

14 If $\angle A$, $\angle B$ are two supplementary angles , $m(\angle A) = 2 m(\angle B)$

, then $m(\angle B) = \dots\dots\dots$

(Luxor - Luxor 25)

- (a) 180° (b) 120° (c) 90° (d) 60°
-

15 If the ratio between the measures of two supplementary angles is 11 : 7 , what is the measure of the smaller angle ?

(Abu El-Matamir - El-Beheira 25)

- (a) 180° (b) 70° (c) 40° (d) 140°
-

16 If $m(\angle A) = 105^\circ$, then $m(\text{Reflex } \angle A) \dots\dots\dots$

(El-Qassasin - Ismailia 25)

- (a) 255° (b) 105° (c) 75° (d) 360°
-

17 If the angle of measure $(2x + 10)^\circ$ is vertically opposite angle to an angle of measure 80° , then $x = \dots\dots\dots$

(Quisna - El-Monofia 25)

- (a) 40 (b) 35 (c) 25 (d) 45
-

18 The sum of the measures of the accumulative angles at a point is equal to the measure of right angles.

(Bander Kafr El-Dawar - El-Beheira 25)

- (a) 3 (b) 4 (c) 5 (d) 6
-

19 The measures of four accumulative angles at a point are x° , 110° , 100° , 80° , then $x = \dots\dots\dots$

(Samannoud - El-Gharbia 25)

- (a) 70 (b) 60 (c) 50 (d) 40
-

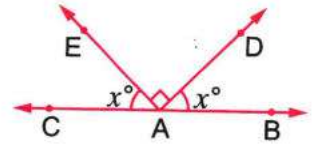
- 20** The measure of each of two vertically opposite complementary angles is°

(Ashmoun - El-Manofia 25)

- (a) 180 (b) 90 (c) 50 (d) 45

- 21** In the opposite figure :

$x = \dots\dots\dots$



(Fayed - Ismailia 25)

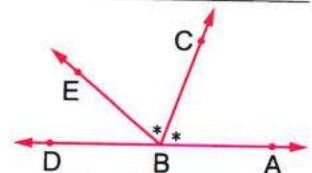
- (a) 30 (b) 60
(c) 45 (d) 90

- 22** In the opposite figure :

If $B \in \overleftrightarrow{DA}$,

$\overrightarrow{BC}$ bisects $\angle ABE$, $m(\angle ABE) = 150^\circ$

What is the measure of $\angle DBC$?

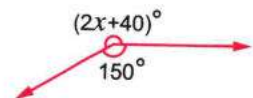


(Zafta - El-Gharbia 52)

- (a) 30° (b) 75° (c) 105° (d) 150°

- 23** In the opposite figure :

$x = \dots\dots\dots$

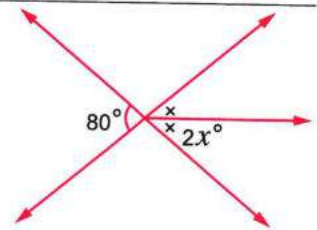


(West Beni Suef - Beni Suef 25)

- (a) 100 (b) 35 (c) 85 (d) 70

- 24** In the opposite figure :

$x = \dots\dots\dots$

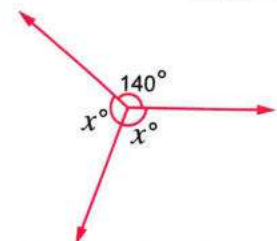


(Motubas - Kafr El-Sheikh 25)

- (a) 20 (b) 360
(c) 40 (d) 80

- 25** In the opposite figure :

What is the value of x ?

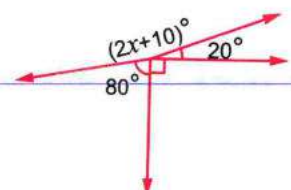


(Atfih - Giza 25 / Kafr Shukr - El-Kalyoubia 25)

- (a) 220 (b) 130
(c) 110 (d) 100

- 26** In the opposite figure :

$x = \dots\dots\dots$



(Rashid - El-Beheira 25)

- (a) 60 (b) 80
(c) 90 (d) 95

27 If a straight line intersects two parallel straight lines, then each two alternating angles are (Berket El-Sabaa - El-Monofia 25)

- (a) supplementary. (b) complementary.
 (c) equal in measure. (d) adjacent.

28 The two straight lines that are parallel to a third one are (Basioon - El-Gharbia 25)

- (a) parallel. (b) perpendicular.
 (c) intersecting. (d) coincident.

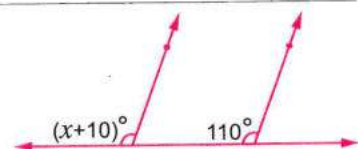
29 The two perpendicular lines to a third one in a plane are (Maghagha - El-Menia 25)

- (a) perpendicular. (b) parallel. (c) intersecting.

30 In the opposite figure :

$x =$

- (a) 70 (b) 60
 (c) 100 (d) 110

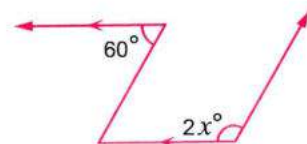


(El-Hawamdeya - Giza 25)

31 In the opposite figure :

$x =$

- (a) 60 (b) 120
 (c) 240 (d) 30

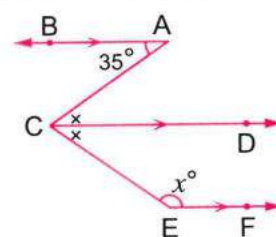


(El-Amiriyah - Alex. 25)

32 In the opposite figure :

$x =$

- (a) 145 (b) 135
 (c) 85 (d) 35

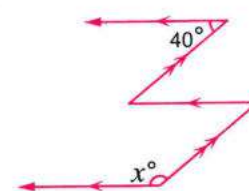


(El-Qareen - El-Sharkia 25)

33 In the opposite figure :

$x =$

- (a) 40 (b) 60
 (c) 140 (d) 80



(El-Agouza - Giza 25)

34 The sum of measures of the interior angles of a triangle is

(Banha - El-Kalyoubia 25 / Samasta - Beni Suef 25)

- (a) 90° (b) 180° (c) 120° (d) 360°

35 In $\triangle ABC$, if $m(\angle A) = 50^\circ$, $m(\angle B) = 100^\circ$, then $m(\angle C) = \dots\dots\dots$

(El-Mokattam - Cairo 25)

- (a) 30° (b) 50° (c) 120° (d) 90°

36 If $\triangle ABC$ is right angled at B, $m(\angle A) = 30^\circ$, then $m(\angle C) = \dots\dots\dots$

(Bulaq El-Dakrour - Giza 25)

- (a) 60° (b) 30° (c) 90° (d) 180°

37 The measure of the exterior angle at any vertex of an equilateral triangle is

(East El-Mansoura - El-Dakahlia 25)

- (a) 720° (b) 60° (c) 108° (d) 120°

38 Any triangle contains two angles at least.

(Atfih - Giza 25)

- (a) acute. (b) obtuse. (c) vertical. (d) reflex.

39 If a triangle has two angles of measures 35° and 55° , then the type of this triangle is -angled triangle (according to the measure of its angles).

(South - Ismailia 25)

- (a) acute. (b) obtuse. (c) right. (d) otherwise.

40 Which of the following can be the lengths of the sides of a triangle ?

(Shibin El-Kom - Monofia 25)

- (a) 9 cm, 6 cm, 5 cm (b) 9 cm, 4 cm, 5 cm
(c) 12 cm, 4 cm, 6 cm (d) 7 cm, 3 cm, 2 cm

41 A triangle can be drawn with sides of lengths (6, 5,) cm. (Abu El-Nomros - Giza 25)

- (a) 15 (b) 4 (c) 1 (d) 11

42 An isosceles triangle has two sides of length 2 cm and 5 cm. What is the length of the third side ?

(Sars El-Layan - El-Monofia 25)

- (a) 2 cm (b) 3 cm (c) 4 cm (d) 5 cm

43 If the lengths of two sides of a triangle are 5 cm and 2 cm, then the greatest integer that can be the length of the third side is cm.

(Abu El-Matamir - El-Beheira 25)

- (a) 3 (b) 5 (c) 6 (d) 7

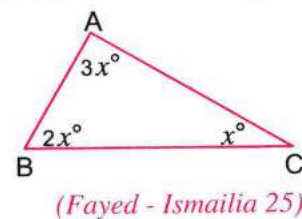
- 44** In the triangle ABC, the length of $\overline{AB}$ is 5 cm , and the length of $\overline{BC}$ is 7 cm , then the smallest integer that can be the length of $\overline{AC}$ is
 (a) 2 cm (b) 3 cm (c) 11 cm (d) 12 cm
(El-Zarqa - Damietta 25)

- 45** If $\triangle ABC$ is scalene , $AC = 10$ cm and $BC = 4$ cm , what is the number of integers could be length of $\overline{AB}$?
 (a) 6 (b) 5 (c) 4 (d) 7
(East El-Mahalla - El-Gharbia 25)

- 46** In the opposite figure :

$x = \dots\dots\dots$

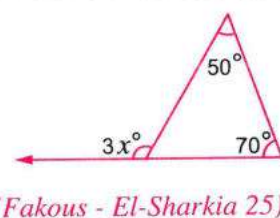
- (a) 60 (b) 30
 (c) 180 (d) 90



- 47** In the opposite figure :

$x = \dots\dots\dots$

- (a) 30 (b) 40
 (c) 120 (d) 20



- 48** What is the sum of the measures of the interior angles of the quadrilateral ?
 (a) 540° (b) 360° (c) 180° (d) 720°
(Basioon - El-Gharbia 25)

- 49** A quadrilateral in which each two opposite sides are parallel is called
 (a) a triangle. (b) a trapezium. (c) a parallelogram. (d) a circle.
(Kom Ambo - Aswan 25)

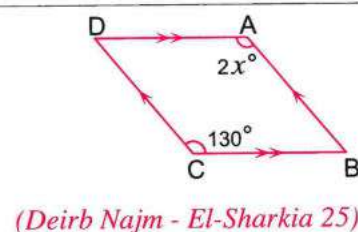
- 50** ABCD is a parallelogram where $m(\angle B) = 80^\circ$, then $m(\angle C) = \dots\dots\dots^\circ$
 (a) 10 (b) 100 (c) 80 (d) 40
(Kafr Saad - Damietta 25)

- 51** The quadrilateral in which only two sides are parallel and unequal in length is
 (a) a square. (b) a rectangle. (c) a trapezium. (d) a rhombus.
(Motubas - Kafr El-Sheikh 25)

- 52** In the opposite figure :

ABCD is a parallelogram , then $x = \dots\dots\dots$

- (a) 25 (b) 65
 (c) 130 (d) 180



53 If the two diagonals of a parallelogram are equal in length , then it is

(El-Rahmaniyah - El-Beheira 25)

- (a) a square. (b) a rhombus. (c) a rectangle. (d) a trapezium.

54 If ABCD is a parallelogram and $m(\angle A) = m(\angle B)$, then ABCD is a

(Sinnuris - El-Fayoum 25)

- (a) rectangle. (b) square. (c) rhombus. (d) trapezium.

55 All angles of a parallelogram are right angles , then it is a

(East - Alex. 25)

- (a) rhombus. (b) square. (c) rectangle. (d) trapezium.

56 The diagonals of a rectangle are

(Middle - Alex. 25)

- (a) equal in length. (b) equal in length and perpendicular.
(c) perpendicular. (d) none of the previous.

57 If two adjacent sides of a parallelogram are equal in length , then the shape is a

(Qena - Qena 25)

- (a) trapezium. (b) rhombus. (c) rectangle. (d) square.

58 A parallelogram in which the two diagonals are perpendicular and unequal in length is a

(El-Fashn - Beni Suef 25)

- (a) rhombus. (b) rectangle. (c) square. (d) trapezium.

59 A parallelogram with two perpendicular diagonals and equal in length is a

(El-Harm - Giza 25)

- (a) rhombus (b) rectangle (c) square (d) trapezium

60 A rhombus with two diagonals equal in length is a (East Mansoura - El-Dakahlia 25)

- (a) square. (b) rhombus. (c) rectangle. (d) trapezium.

61 A rectangle whose two diagonals are perpendicular is a

(El-Badrashin - Giza 25)

- (a) square (b) rhombus (c) parallelogram (d) trapezium

62 If ABCD is a square , then $m(\angle CAB) =$

(Bandar Kfar El-Dawar - El-Beheira 25)

- (a) 90° (b) 45° (c) 30° (d) 60°

63 If ABCD is a parallelogram : $AC \neq BD$, $\overline{AC} \perp \overline{BD}$, then ABCD is a
(West Shoubra El-Khayma - El-Kalyoubia 25)

- (a) rhombus. (b) trapezium. (c) rectangle. (d) square.

64 The diagonals are equal in length and not perpendicular in the
(El-Dalangat - El-Beheira 25)

- (a) rectangle. (b) rhombus. (c) square. (d) triangle.

65 The diagonals bisect the interior angles in each of the following shapes :
(Atfih - Giza 25)

- (a) rhombus and rectangle. (b) square and rectangle.
 (c) rhombus and square. (d) square and parallelogram.

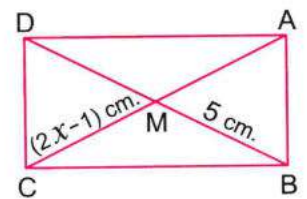
66 The quadrilateral in which the two diagonals are equal in length and bisect each other belongs to the set
(Samannoud - El-Gharbia 25)

- (a) {square , rhombus} (b) {parallelogram , rectangle}
 (c) {square , rectangle} (d) {trapezium , parallelogram}

67 In the opposite figure :

ABCD is a rectangle
 , then $X = \dots\dots\dots$

- (a) 6 (b) 5
 (c) 2 (d) 3

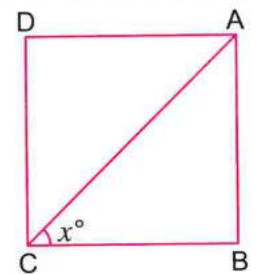


(Rashid - El-Beheira 25)

68 In the opposite figure :

ABCD is a square ,
 what is the value of X ?

- (a) 45 (b) 60
 (c) 90 (d) 180

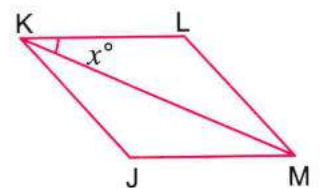


(Nasser - Beni Suef 25)

69 In the opposite figure :

If JKLM is a rhombus
 which of the following expressions represents $m(\angle J)$?

- (a) $2X^\circ$ (b) $(180 - X)^\circ$
 (c) $(180 - 2X)^\circ$ (d) $(180 + 2X)^\circ$



(Qaleen - Kafr El-Sheikh 25)

70 Which of the following angles must be one of the angles of a polygon to be a concave ?

(Shibin El-Qanater - El-Kalyoubia 25)

- (a) Acute. (b) Right. (c) Obtuse. (d) Reflex.

71 The sum of the measures of the interior angles of a hexagon is equal to

(Shoubra - Cairo 25 / El-Dalangat - El-Beheira 25)

- (a) 180° (b) 360° (c) 720° (d) 540°

72 The measure of each interior angle of a regular pentagon equals

(El-Manzala - El-Dakahlia 25)

- (a) 120° (b) 108° (c) 135° (d) 140°

73 The measure of each interior angle of a regular 10 sided polygon is equal to

(Middle - Cairo 25)

- (a) 180° (b) 120° (c) 135° (d) 144°

74 The number of axes of symmetry of an isosceles triangle is

(El-Menia - El-Menia 25 / Saqalta - Souhag 25)

- (a) 2 (b) 4 (c) 1 (d) None

75 The number of axes of symmetry of an equilateral triangle is (Assiut - Assiut 25)

- (a) 6 (b) 5 (c) 4 (d) 3

76 The number of axes of symmetry of a rectangle is

(West - Alex. 25)

- (a) 0 (b) 1 (c) 2 (d) 3

77 The number of axes of symmetry of a rhombus is

(El-Waqf - Qena 25)

- (a) 4 (b) 2 (c) 0 (d) 1

78 The number of axes of symmetry of a square is (Shibin El-Qanater - El-Kalyoubia 25)

- (a) 4 (b) 3 (c) 2 (d) 1

79 What is the number of axes of symmetry of a regular polygon with 9 sides ?

(Dar El-Salam - Cairo 25)

- (a) 9 (b) 10 (c) 18 (d) 11

80 The point $(-5, 2)$ lies in the quadrant. (El-Agouza - Giza 25 / El-Ibrahimia - El-Sharkia 25)

- (a) first. (b) second. (c) third. (d) fourth.

- 81** The point $(3, -2)$ lies in the quadrant. (El-Badrashin - Giza 25)
 (a) first. (b) second. (c) third. (d) fourth.
-
- 82** If point $(7, m + 3)$ lies on the X -axis, then $m =$ (Kom Hamada - El-Beheira 25)
 (a) 0 (b) 3 (c) -3 (d) -7
-
- 83** If point $(k + 3, 2k - 2)$ lies on the y -axis, then $k =$ (Middle - Alex. 25)
 (a) 1 (b) 3 (c) -3 (d) -1
-
- 84** If the point $(a - 2, 3a + 3)$ lies on the X -axis, then the point $(a, 6 - a)$ lies in the quadrant. (Samasta - Beni Suef 25)
 (a) first. (b) second. (c) third. (d) fourth.
-
- 85** The projection of the point $(2, -3)$ on the X -axis is (El-Khanka - El-Kalyoubia 25)
 (a) $(0, -3)$ (b) $(2, 0)$ (c) $(2, 3)$ (d) $(-3, 2)$
-
- 86** The projection of the point $(2, -2)$ on the y -axis is (Ain Shams - Cairo 25)
 (a) $(0, -2)$ (b) $(0, 2)$ (c) $(2, 0)$ (d) $(-2, 0)$
-
- 87** If $A(-7, 5)$, $B(7, -5)$, then the midpoint of $\overline{AB}$ is (Kom Ambo - Aswan 25)
 (a) $(7, 0)$ (b) $(0, 5)$ (c) $(0, 0)$ (d) $(14, 10)$
-
- 88** If $(3, 5)$ is the midpoint of $\overline{AB}$ where $A(X, 4)$, $B(1, 6)$, then $X =$ (Bandar Kafr El-Dawar - El-Beheira 25)
 (a) 5 (b) 6 (c) 3 (d) 2
-
- 89** If $B(0, y)$ is the midpoint of $\overline{AB}$, where $A(-3, 1)$ and $B(3, 5)$, then $y =$ (Assiut - Assiut 25)
 (a) 6 (b) 5 (c) 3 (d) 1
-
- 90** What is the length of the projection of the line segment $\overline{AB}$ on the X -axis where $A(-4, 3)$, $B(-2, 3)$? (Dar El-Salam - Cairo 25)
 (a) -3 (b) -2 (c) 2 (d) 3
-
- 91** The distance between the two points $(-2, 3)$, $(8, 3) =$ length units. (El-Mansha - Souhag 25)
 (a) 6 (b) 10 (c) zero (d) 5

- 92 If the origin is the midpoint of $\overline{AB}$, and A lies in the second quadrant, then B lies in the quadrant.

(Matay - El-Menia 25)

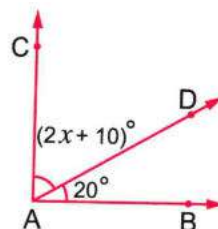
- (a) first (b) second (c) third (d) fourth

Second Essay questions

- 1 In the opposite figure :

If $\overrightarrow{AC}$ is perpendicular to $\overrightarrow{AB}$

Find the value of : x



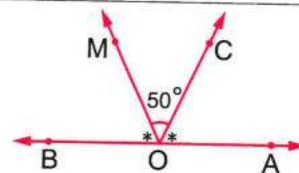
(Luxor - Luxor 25)

- 2 In the opposite figure :

If $O \in \overleftrightarrow{AB}$, $m \angle AOC = m \angle BOM$

, $m \angle MOC = 50^\circ$

Find with proof : $m \angle AOM$

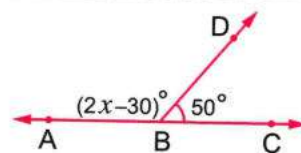


(Itai El-Baroud - El-Beheira 25)

- 3 In the opposite figure :

If A, B, C are on the same straight line

Find the value of : x

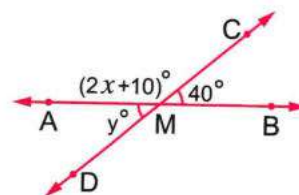


(El-Bagour - El-Monofia 25)

- 4 In the opposite figure :

$\overleftrightarrow{AB} \cap \overleftrightarrow{DC} = \{M\}$, $m \angle CMB = 40^\circ$

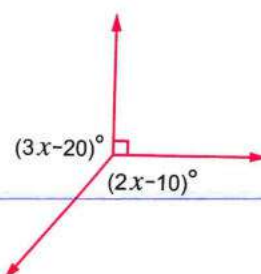
Find the value of each of : x , y



(Tukh - El-Kalyoubia 25)

- 5 In the opposite figure :

Find the value : x

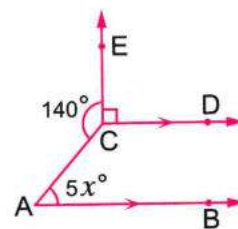


(Quesna - El-Monofia 25)

- 6 In the opposite figure :**

$$\overrightarrow{AB} \parallel \overrightarrow{CD}$$

Find the value : x



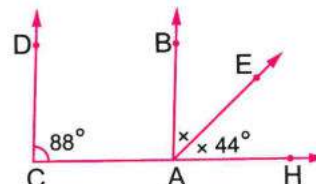
(Dar El-Salam - Cairo 25)

- 7 In the opposite figure :**

$$m(\angle EAH) = 44^\circ, m(\angle C) = 88^\circ$$

$\overrightarrow{AE}$ bisects $\angle BAH$

Prove that : $\overrightarrow{CD} \parallel \overrightarrow{AB}$

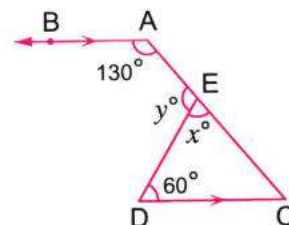


(Mit Salsil - El-Dakahlia 25)

- 8 In the opposite figure :**

$$\overrightarrow{AB} \parallel \overrightarrow{CD}$$

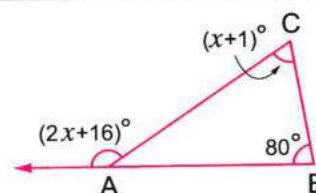
Find with proof the value of each of : x, y



(El-Hamoul - Kafr El-Sheikh 25)

- 9 In the opposite figure :**

Find the value of : x



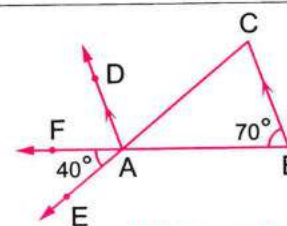
(El-Khanka - El-kalyoubia 25)

- 10 In the opposite figure :**

$$\overrightarrow{BF} \cap \overrightarrow{CE} = \{A\}$$

Prove that :

$\overrightarrow{AD}$ bisects $\angle FAC$



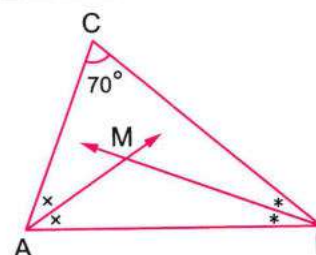
(Damanhour - El-Beheira 25)

- 11 In the opposite figure :**

$\overrightarrow{AM}$ bisects $\angle A$

$\overrightarrow{BM}$ bisects $\angle B$

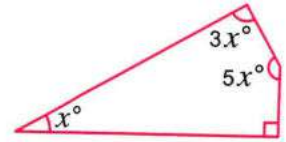
Find : $m(\angle AMB)$



(Ihnasia - Beni Suef 25)

12 In the opposite figure :

Find the value of : x



(El-Waily - Cairo 25)

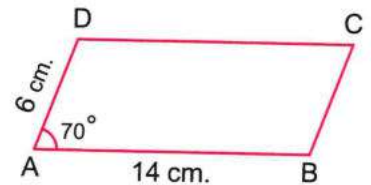
13 In the opposite figure :

ABCD is parallelogram

Find :

① $m(\angle C)$, $m(\angle D)$

② The perimeter of parallelogram.



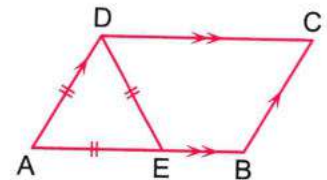
(Port Said 25)

14 In the opposite figure :

ABCD is a parallelogram

$AD = AE = DE$

Find with proof : $m(\angle B)$



(Nabarow - El-Dakahlia 25)

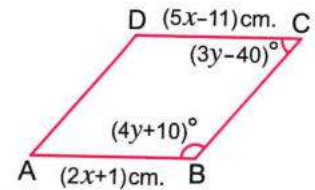
15 In the opposite figure :

If ABCD is parallelogram

$m(\angle C) = (3y - 40)^\circ$, $m(\angle B) = (4y + 10)^\circ$

$AB = (2x + 1) \text{ cm}$, $DC = (5x - 11) \text{ cm}$

Find the value of each of : x , y

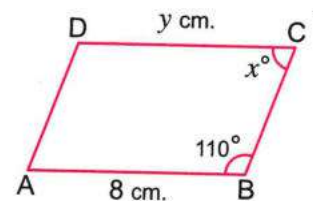


(El-Rahmaniyah - El-Beheira 25)

16 In the opposite figure :

Find the value of each of : x , y

which makes ABCD is a parallelogram.



(El-Adwa - El-Menia 25)

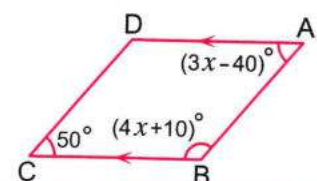
17 In the opposite figure :

$\overline{AD} \parallel \overline{BC}$

$m(\angle B) = (4x + 10)^\circ$, $m(\angle C) = 50^\circ$

$m(\angle A) = (3x - 40)^\circ$

Prove that : ABCD is parallelogram



(Sinnuris - El-Fayoum 25)

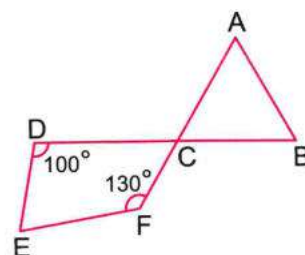
18 In the opposite figure :

If triangle ABC is an equilateral triangle

$$m(\angle D) = 100^\circ, m(\angle F) = 130^\circ$$

$$\overline{AF} \cap \overline{BD} = \{C\}$$

Find in steps : $m(\angle E)$

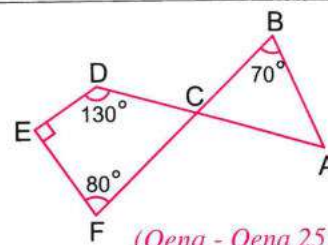


(East El-Mansoura - El-Dakahlia 25)

19 In the opposite figure :

$$\overline{AD} \cap \overline{BF} = \{C\}$$

Find with proof : $m(\angle A)$



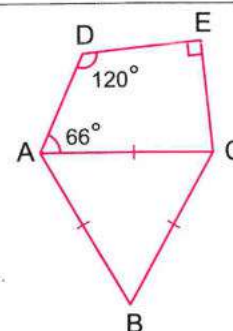
(Qena - Qena 25)

20 In the opposite figure :

ABC is an equilateral triangle , $m(\angle DAC) = 66^\circ$

$$m(\angle D) = 120^\circ, m(\angle E) = 90^\circ$$

Find : $m(\angle ECB)$



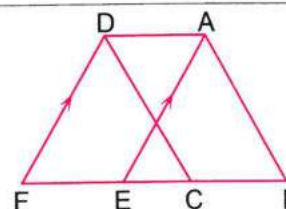
(Damanhour - El-Beheira 25)

21 In the opposite figure :

ABCD is parallelogram

$$E \in \overrightarrow{BC}, F \in \overrightarrow{BC}, \overline{EA} \parallel \overline{FD}$$

Prove that : AEFD is parallelogram

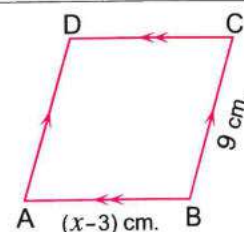


(Qaleen - Kafr El-Sheikh 25)

22 In the opposite figure :

ABCD is a rhombus

Find the value of : x



(Masr El-Kadema - Cairo 25)

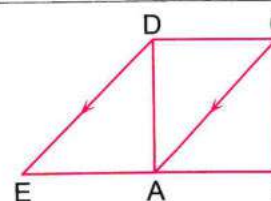
23 In the opposite figure :

ABCD is a square

$$\overline{AC} \parallel \overline{ED}, E \in \overrightarrow{BA}$$

① **Prove that :** $AE = AB$

② **Find :** $m(\angle E)$.



(Kafr Shukr - El-Kalyoubia 25)

(Qalyub - El-Kalyoubia 25)

24 The side length of a regular pentagon is 8 cm **Find :**

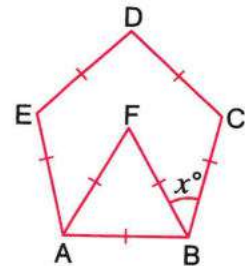
- ① The measure of its interior angle.
- ② Its perimeter.
- ③ The number of its axes of symmetry.

(El-Sinnblawein - El-Dakahlia 25)

25 In the opposite figure :

If $m(\angle FBC) = x^\circ$

Find with proof the value of : x



(Tala - El-Monofia 25)

26 Find the coordinates of the midpoint of $\overline{AB}$ in each of the following where :

- ① A (1 , 1) , B (5 , 3)
- ② A (-3 , 5) , B (7 , -5)
- ③ A (2 , -2) , B (0 , 8)

(Akhmim - Souhag 25)

(El-Hawamdeya - Giza 25)

(Edfu - Aswan 25)

27 If M (3 , 2) is the midpoint of $\overline{AB}$ where A (1 , 5), find the coordinates of the point B

(Dar El-Salam - Souhag 25)

28 If the point C (2 , 3) is the midpoint of $\overline{AB}$ where : A (x , -2) , B (4 , y)

Find the value of : x , y

(North - Giza 25)

29 If the origin is the midpoint of $\overline{AB}$ where : A (3 , y) , B (x , -4)

Find the value of : $x + y$

(Qaha - El-Kalyoubia 25)

30 If ABCD is a parallelogram where : A (-2 , 2) , B (3 , 2) , C (2 , -2)

Find :

- ① The intersection point of its diagonals.
- ② The coordinates of the vertex D.

(Qesna - El-Monofia 25)

Important questions on unit four from the directorates' exams



First Multiple choice questions

- 1 The most common value is the *(El-Menia - El-Menia 25)*
(a) arithmetic mean. (b) median. (c) mode. (d) range.
-
- 2 The mode for the values: 8 , 4 , 5 , 4 , 8 , 6 , 4 , 5 is *(Abu Qurqas - El-Menia 25)*
(a) 4 (b) 5 (c) 6 (d) 8
-
- 3 If the mode of the numbers : $X - 3$, 8 , 5 , 7 , 9 is 8
 , then $X =$ *(Itai El-Baroud - El-Beheira 25)*
(a) 9 (b) 7 (c) 11 (d) 12
-
- 4 If the mode for the values : 8 , 9 , $2X$, 5 , 3 is 8 , then the value of X is
(North Giza - Giza 25)
(a) 6 (b) 16 (c) 4 (d) 8
-
- 5 If the mode for the values : $a + 3$, $a + 4$, $a + 2$, $a + 3$ is 15
 , then the value of $a =$ *(Ihnasia - Beni Suef 25)*
(a) 12 (b) 11 (c) 10 (d) 13
-
- 6 The difference between the greatest value and the smallest value of a set of data is called
 the *(Masr El-Gedida - Cairo 25)*
(a) mode. (b) median.
(c) range. (d) arithmetic mean.
-
- 7 The range for the set of values : 44 , 17 , 14 , 25 , 21 is equal to
(El-Dalangat - El-Beheira 25)
(a) 14 (b) 23 (c) 30 (d) 48
-
- 8 Which of the following is suitable for representing descriptive data ? *(El-Mataria - Cairo 25)*
(a) Histogram. (b) Bar graph.
(c) Dot plot. (d) Stem and leaf plot.

- 9 Which of the following charts does not show real data? (Dar El-Salam - Cairo 25)
- (a) Dot plot. (b) Histogram.
 (c) Stem and leaf plot. (d) Bar graph.

- 10 The first quartile in the box plot represents approximately the lowest % of the data value. (Matay - El-Menia 25)
- (a) 20 (b) 25 (c) 35 (d) 50

- 11 From the following frequency table :

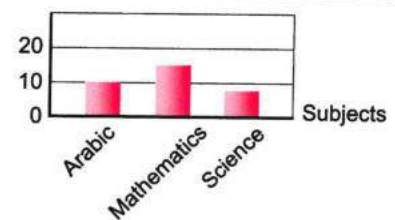
The number of those who scored 30 points or more =

(El-Nuzha - Cairo 25)

The period	10 –	20 –	30 –	40 –	50 –
The frequency	3	5	8	3	2

- (a) 7 (b) 13 (c) 19 (d) 27

- 12 The opposite figure represents the favorite subjects of students in one classe. The number of students who like Arabic is



- (a) 10 (b) 15
 (c) 8 (d) 12 (East El-Mansoura - El-Dakahlia 25)

- 13 The first quartile of the values : 5 , 2 , 1 , 3 , 4 , 6 , 7 is (Esna - Luxor 25)
- (a) 2 (b) 3 (c) 4 (d) 5

- 14 The first quartile of the values : 12 , 15 , 11 , 14 , 10 , 16 is

(Supervision - El-Beheira 25)

- (a) 11 (b) 12 (c) 14 (d) 15

- 15 The first quartile of the numbers : 1 , 7 , 1 , 5 , 6 , 3 , 5 equals

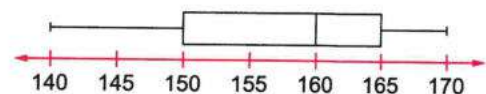
(Deir Mawas - El-Menia 25)

- (a) 1 (b) 3 (c) 5 (d) 6

- 16 From the following box plot , the first quartile is equal to

(Qus - Qena 25)

- (a) 170 (b) 150
 (c) 160 (d) 165



- 17 The third quartile for the values : 8 , 7 , 6 , 5 , 4 , 3 , 2 is

(Bandar Kfar El-Dawar - El-Beheira 25)

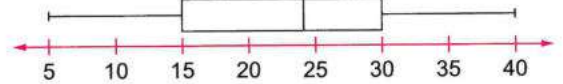
- (a) 5 (b) 6 (c) 7 (d) 8

- 18 The third quartile for the numbers : 16 , 10 , 14 , 11 , 15 , 12 is

(El-Bagour - El-Monofia 25)

- (a) 11 (b) 12 (c) 14 (d) 15

- 19 The opposite figure represents the box plot of a set of data.



The third quartile is

(El-Qanater El-Khairiya - El-Kalyoubia 25)

- (a) 30 (b) 25 (c) 20 (d) 15

- 20 From the opposite stem and leaf plot ,
What is the third quartile ?

(West Shoubra El-Khayma - El-Kalyoubia 25)

Stems	Leaves
0	9
1	0 2 2 2 3 4 5 6 6
2	0 1 1 5 7 8 9

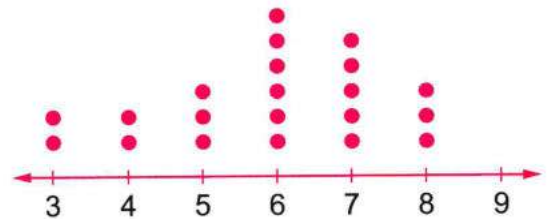
- (a) 16 (b) 17
(c) 20 (d) 23

Key 1 | 2 means 21

- 21 In the opposite shape :

The mode =

- (a) 8 (b) 5
(c) 7 (d) 6



(Rod El-Farag - Cairo 25)

- 22 From the opposite stem and leaf plot ,
the mode is equal to

(Qus - Qena 25)

- (a) 21 (b) 22
(c) 41 (d) 32

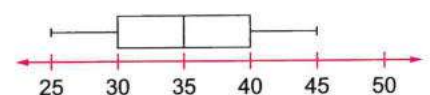
Stems	Leaves
2	1 1 2
3	2 2 2
4	1 3

Key 2 | 1 represents 21 hours

- 23 From the opposite box plot , the range =

(El-Menia - El-Menia 25)

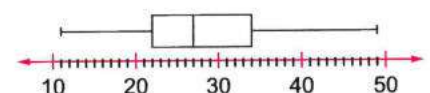
- (a) 20 (b) 30
(c) 35 (d) 40



- 24 From the opposite box plot , the range =

(Rashid - El-Beheira 25)

- (a) 59 (b) 34
(c) 38 (d) 48



- 25 Using the opposite stem and leaf plot ,
the range is

(a) 47 (b) 45
(c) 22 (d) 56

Stems	Leaves
3	4 5 6 7 8
4	0 5 7 7 7
5	2 3 6

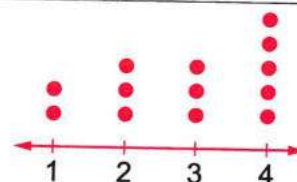
Key 4 | 0 means 40

(Abu El-Matamir - El-Beheira 25)

- 26 Using the opposite dot plot , the median =

(a) 1 (b) 2
(c) 3 (d) 4

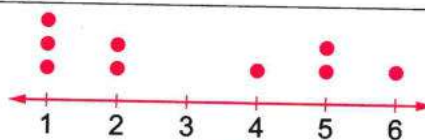
(El-Gomrok - Alex. 25)



- 27 Using the opposite dot plot , the median =

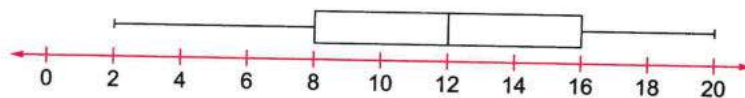
(a) 2 (b) 3 (c) 4 (d) 5

(Abu El-Nomros - Giza 25)



- 28 From the following box plot , the median =

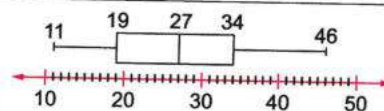
(El-Matariya - Cairo 25)



(a) 14 (b) 12 (c) 16 (d) 8

- 29 From the opposite box plot , what is the median ?

(West Shoubra El-Kheima - El-Kalyoubia 25)



(a) 19 (b) 27 (c) 30 (d) 34

- 30 From the opposite stem and leaf diagram , what is the median ?

(Sers El Lian - El-Monofia 25)

(a) 38 (b) 41
(c) 45 (d) 53

Stems	Leaves
2	1 3 6 8
3	2 4 4 8 9
4	1 5 5 6 7 8
5	0 3 7 9

Key 5 | 3 represents 53

- 31 From the opposite stem and leaf diagram ,
the value of the median is

(a) 39 (b) 10
(c) 3 (d) 13

Stems	Leaves
0	1 1 2 2 3 3 4 4 5
1	0 1 2 2 3 3 3 5 6
2	0 1 5 6 7 7 8 9 9
3	7 8 9

Key 3 | 9 represents 39 degrees

(South - Ismailia 25)

- 32** The median for the set of values : 3 , 0 , 10 , 2 , 7 is *(El-Hawamdeya - Giza 25)*
 (a) 0 (b) 2 (c) 7 (d) 3
-
- 33** The median for the set of values : 10 , 7 , 5 , 4 , 4 is *(Damanhour - El-Beheira 25)*
 (a) 4 (b) 5 (c) 6 (d) 10
-
- 34** The median for the values : 2 , 6 , 9 , 8 , 4 , 7 is *(Fakous - El-Sharkia 25)*
 (a) 6 (b) 7 (c) 6.5 (d) 7.5
-
- 35** The median of the values : 16 , 10 , 14 , 12 , 16 , 12 is *(Manfalut - Assiut 25)*
 (a) 12 (b) 14 (c) 13 (d) 16
-
- 36** If the order of the median is the fifth , then the number of values is *(Quesna - El-Monofia 25)*
 (a) 5 (b) 10 (c) 8 (d) 9
-
- 37** If the order of the median is the eighth , then the number of values = *(Quesna - El-Monofia 25)*
 (a) 8 (b) 14 (c) 16 (d) 15
-
- 38** If the median of the values : $X - 2$, $X + 3$, $X + 1$ is 5 , then $X =$ *(East El-Mansoura - El-Dakahlia 25)*
 (a) 4 (b) 2 (c) 7 (d) 5
-
- 39** The arithmetic mean of the values : 3 , 5 , 7 , 9 is *(Saqalta - Souhag 25)*
 (a) 6 (b) 24 (c) 7 (d) 3
-
- 40** The arithmetic mean of the set of values : 3 , 0 , 9 , 8 , 5 is *(Shibin El-Kom - El-Monofia 25)*
 (a) 0 (b) 9 (c) 25 (d) 5
-
- 41** If for a set of data $\sum f = 20$, $\sum (f \cdot X) = 240$, then $\bar{X} =$ *(El-Qusia - Assiut 25)*
 (a) 260 (b) 220 (c) 40 (d) 12
-
- 42** For a set of data, if $\sum f = 10$, $\bar{X} = 8$, then $\sum (f \cdot X) =$ *(Berket El-Sabaa - El-Monofia 25)*
 (a) 80 (b) 2 (c) 18 (d) 8

- 43** If the arithmetic mean of the values : 8 , 6 , 20 , 7 , 8 , x is 10 , then $x = \dots\dots\dots$ (Fakous - El-Sharkia 25)
 (a) 12 (b) 15 (c) 11 (d) 10
-
- 44** The arithmetic mean of the values : 8 , $7 - x$, $x - 3$ is $\dots\dots\dots$ (El-Manzala - El-Dakahlia 25)
 (a) 12 (b) $2x$ (c) 4 (d) $x + 2$
-
- 45** The arithmetic mean of the values : $7 - x$, $5 + 2x$, $3 - x$ is $\dots\dots\dots$ (El-Basateen - Cairo 25)
 (a) 4 (b) 5 (c) 7 (d) 8
-
- 46** If the arithmetic mean of the values : x , $x + 3$, $x - 3$ is 15 , then $x = \dots\dots\dots$ (Kafr Saad - Damietta 25)
 (a) 15 (b) 5 (c) 8 (d) 2
-
- 47** If the arithmetic mean of the numbers : $x + 2$, $x - 5$, $2x + 4$, 8 , $x + 1$ is 7 , what is the value of x ? (Kom Hamada - El-Beheira 25)
 (a) 5 (b) 3 (c) 2 (d) 8
-
- 48** If the arithmetic mean of the scores of 10 students is 15 , then their total scores = $\dots\dots\dots$ (El-Agouza - Giza 25)
 (a) 150 (b) 25 (c) 15 (d) 10
-
- 49** If the arithmetic mean of the lengths of the sides of a triangle is 8 then the perimeter of the triangle = $\dots\dots\dots$ cm. (Ihnasia - Beni Suef 25)
 (a) 16 (b) 24 (c) 36 (d) 32
-
- 50** If the arithmetic mean of 4 values is 10 and three of them are 9 , 8 , and 12 , then the fourth value is $\dots\dots\dots$ (Dar El-Salam - Souhag 25)
 (a) 12 (b) 8 (c) 9 (d) 11
-
- 51** Youssef obtained the following scores : 45 , 48 , 46 , 47 , 48 in five mathematics tests. If the teacher omitted the smallest score , which of the following would be correct ? (Tala - El-Monofia 25)
 (a) The mode increases. (b) The median decreases.
 (c) The average increases. (d) The median will not change.
-
- 52** If the median of eight consecutive odd numbers is 22 , what is the arithmetic mean of the two greatest numbers? (Qena - Qena 25)
 (a) 25 (b) 26 (c) 28 (d) 29

53 If the arithmetic mean of five integers is 14 , the median is 15 , and the mode is 11 , then the greatest numbers is

(Kafir Shukr - El-Kalyoubia 25)

- (a) 14 (b) 16 (c) 17 (d) 18

54 The sum of the percentage in the circular sectors =

(Kom Ambo - Aswan 25)

- (a) 360° (b) 100% (c) 90° (d) 180°

55 The sum of the measures of the angles of the circular sectors accumulative at the centre of the circle =

(Mansha El-Qanater - Giza 25)

- (a) 60° (b) 90° (c) 180° (d) 360°

56 The measure of the central angle of the circular sector whose area is $\frac{1}{5}$ of the area of the circle

(Kerdasa - Giza 25)

- (a) 72° (b) 90° (c) 120° (d) 180°

57 The measure of the central angle of the circular sector representing a quarter of the circle is

(El-Qusia - Assiut 25)

- (a) 90° (b) 180° (c) 270° (d) 360°

58 The measure of the central angle of the circular sector representing $\frac{1}{3}$ of the area of the circle is

(El-Manzala - El-Dakahlia 25)

- (a) 30° (b) 60° (c) 90° (d) 120°

59 If the ratio of land on Earth is about 30% , then the measure of the central angle representing this sector in the pie chart is

(Tukh - El-Kalyoubia 25)

- (a) 330° (b) 360° (c) 90° (d) 108°

60 The measure of the central angle of a circular sector representing 50% of the circle is

(El-Qassasin - Ismailia 25)

- (a) 360° (b) 25° (c) 90° (d) 180°

61 When representing the opposite table with a pie chart , the measure of the central angle of the first stage is equal to

Stage	First	second	Third
Number of students	150	200	250

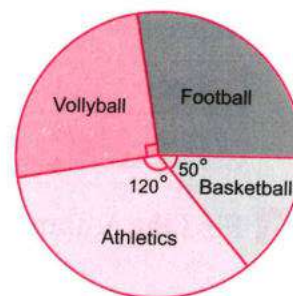
(Shubrakhit - El-Beheira 25)

- (a) 45° (b) 90° (c) 120° (d) 150°

62 In the opposite figure :

The measure of the central angle that represents the football sector = (El-Waily - Cairo 25)

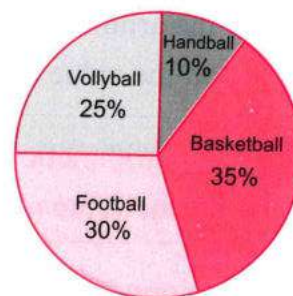
- (a) 50° (b) 100°
(c) 110° (d) 40°



63 In the opposite figure :

The measure of the central angle that represents the football sector = (Supervision - Port Said 25)

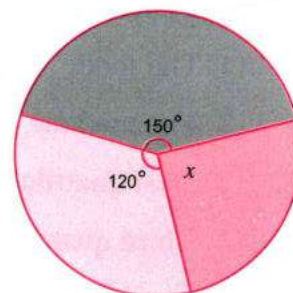
- (a) 108° (b) 36°
(c) 360° (d) 40°



64 In the opposite figure :

The percentage of sector X is (Ashmoun - El-Monofia 25)

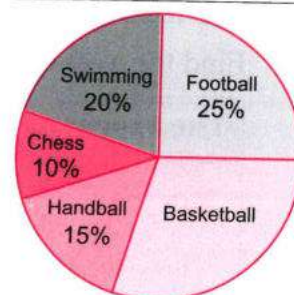
- (a) 35 % (b) 30 %
(c) 25 % (d) 20 %



65 The opposite figure represents the pie chart of students' summer activities where the number of students is 200.

How many students chose basketball? (Tahta - Souhag 25)

- (a) 30 (b) 50
(c) 60 (d) 70

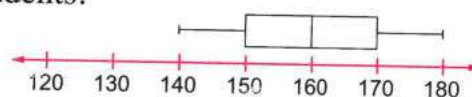


Second Essay questions

1 The opposite box plot represents the lengths of some students.

Find :

- The median
- First quartile
- Third quartile



(El-Obour - El-Kalyoubia 25)

2 Represent the following data in a box plot , and find the median , range , first quartile , and third quartile : 27 , 18 , 31 , 21 , 24 , 22

(Qaleen - Kafr El-Sheikh 25)

3 From the following table :

- ① Draw a bar graph for this data
- ② Find the mode degree

Degree	3	4	5	6	7	8
Frequency	2	2	9	4	5	3

(El-Waqf - Qena 25)

- 4 Represent the table below using histogram :

(Itai El-Baroud - El-Beheira 25)

Periods	3 –	7 –	11 –	15 –	19 –
Frequency	2	6	12	8	4

- 5 Find the arithmetic mean and median of the following data : 11 , 10 , 19 , 17 , 13

(Masr El-Gadida - Cairo 25)

- 6 If the arithmetic mean of the numbers : X , 1 , 7 , 8 , 9 , 8 , 7 , 2 is 6
Find the value of X .

(Abu Qurqas - El-Menia 25)

- 7 If the arithmetic mean of the numbers : X , $X + 1$, $X + 2$ is 7 , then
find the value of X .

(El-Sahel - Cairo 25)

- 8 The opposite figure shows the stem and leaves plot.
Find each of the following:

- ① The mode.
- ② The median.
- ③ First quartile.
- ④ Third quartile.

Stems	Leaves
1	1 4 5 6 8 8 9
2	0 0 1 1 1 6 7 8
3	0 1 2 2 3 4 5
4	0 1 3 4 6
Key	2 1 means 21

(Fayed - Ismailia 25)

- 9 The following table shows the daily expenses of a student during one week
Find the average daily expenses of this student.

(Damanhour - El-Beheira 25)

The expenses in Pounds (X)	The number of days (f)
16	2
20	3
25	1
30	1

- 10 Calculate the arithmetic mean using the following table :

(Abu Kabir - El-Sharkia 25)

The scores	0	1	2	3	4	5	6
The number of students	3	4	6	9	5	3	4

- 11 The following table shows the number of minutes spent by a group of people on telephone conversations. Calculate the average time spent by a person on a telephone conversation.

(Manfalut - Assiut 25)

The number of minutes	2	3	4	5	6
The frequency	12	20	36	20	12

- 12 The following table shows the number of working hours of 100 workers. (Ihnasia - Beni Suef 25)

Number of hours x	4	6	7	8	9	10	13
Number of workers f	15	13	30	M	10	8	2

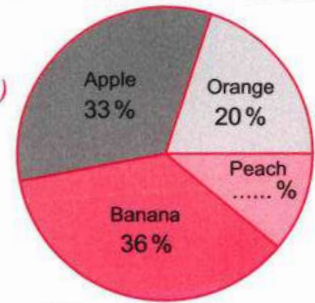
Find the value of M and then find the arithmetic mean of the working hours.

- 13 The opposite figure represents the favorite fruits of 160 students.

(El-Maadi - Cairo 25)

Find :

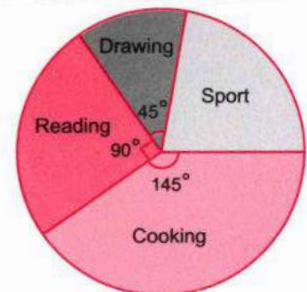
- The number of students who like orange.
- The percentage of the peach sector.



- 14 In a survey of 350 girls about their favorite hobby the results are shown in the opposite pie chart.

- Which hobby do girls prefer more than others?
- What hobby do $\frac{1}{4}$ of the girls prefer?
- What is the measure of the central angle representing the sports sector ?

(West Shoubra El-Kheima - El-Kalyoubia 25)



- 15 A commercial market monitored sales during one day and the results are shown in the following table. Draw a pie chart to represent this table.

(Samannoud - El-Gharbia 25)

Products	Nutrition substances	Dairy	Juices	Desserts
Percentage	45%	30%	10%	15%

- 16 In a survey of a group of people about their favourite sports , the results were as follows :

(East - Alex. 25)

Sports	Handball	Basketball	Football	Volleyball
Percentage	15%	25%	45%	

- Find the percentage of the volleyball.
- Find the central angle measure of the football.

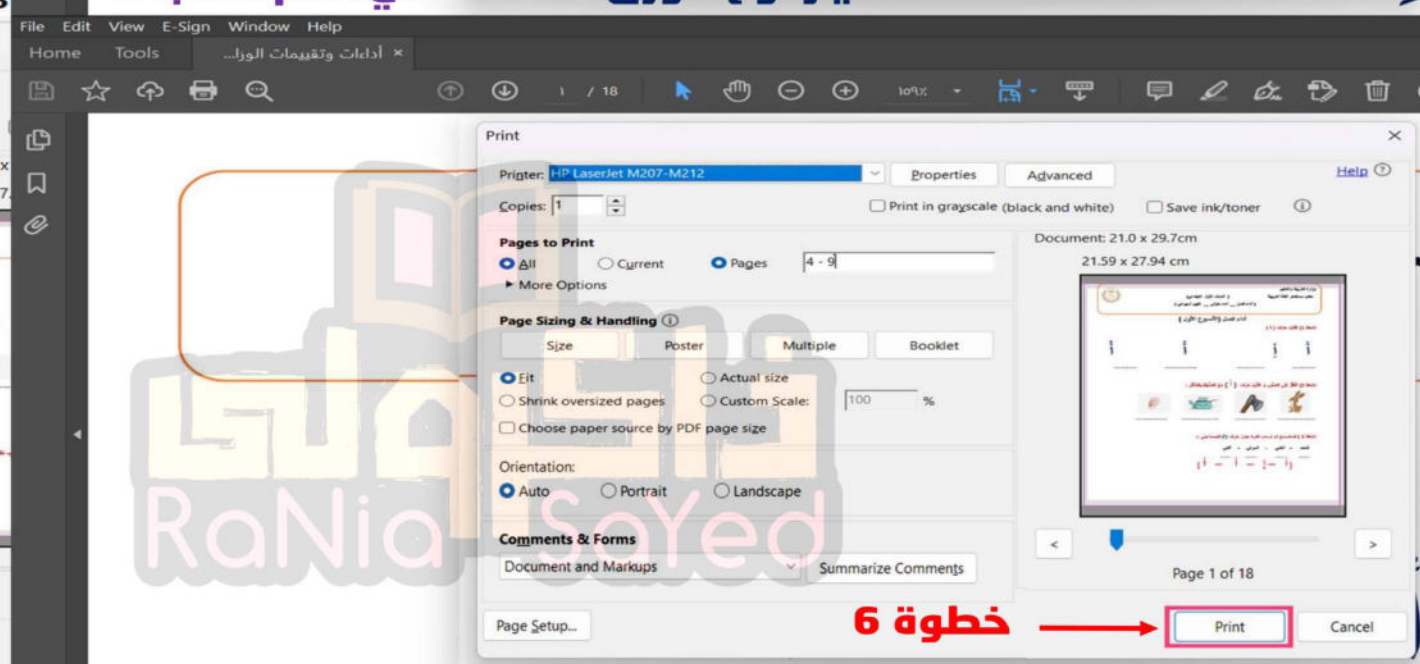
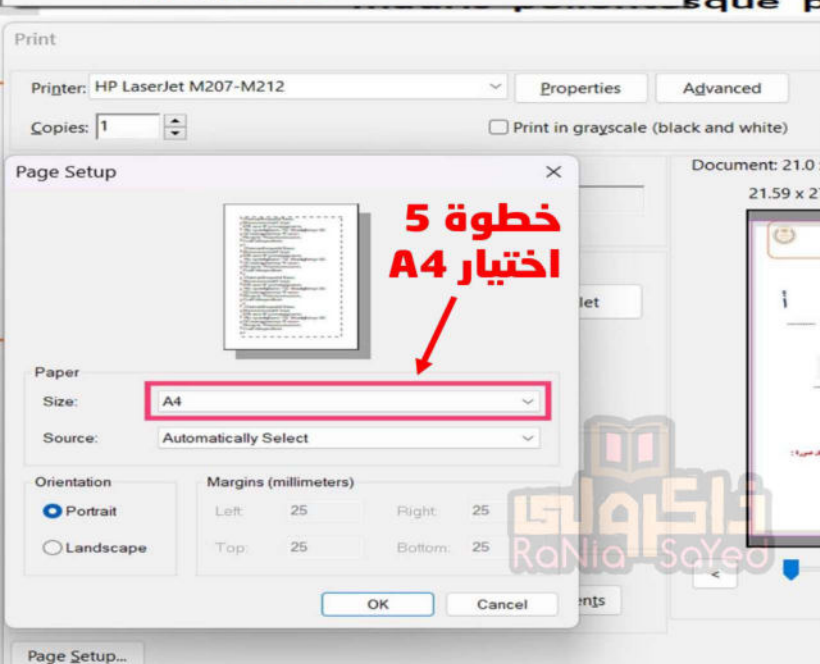
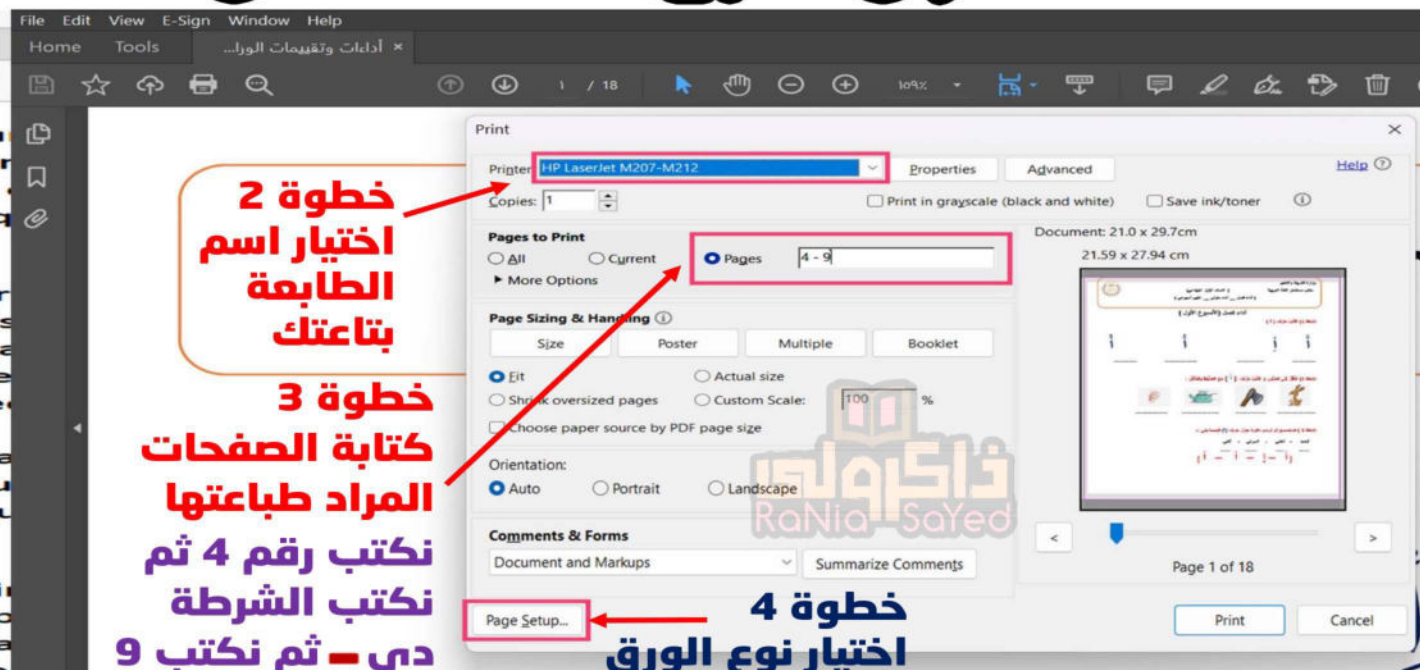
- 17 The following table shows the number of participants in the school activities.

(Deir Mawas - El-Menia 25)

Activity	Sport	Arts	Agricultural	Industrial	Total
Number of students	50	60	40	50	200

Represent this information using pie charts.

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



حمل الآن

مجاناً وحصرياً

المراجعة رقم (2)

الترم الاول





First term Questions Bank



Question 01

Choose the correct answer

- 1 The arithmetic mean of the values 6,4,7,3 is
 (a) 4 (b) 20 (c) 5 (d) 5.5
- 2 The circular sector that represents the area of the circle °
 (a) 360 (b) 180 (c) 90 (d) 40
- 3 If $X \notin \{7,2,5\}$, which of the following can be X ?
 (a) 2 (b) 7 (c) 1 (d) 5
- 4 If $\{X,3\} = \{5,Y\}$, what is the value $X+Y$?
 (a) 15 (b) 8 (c) 3 (d) 5
- 5 If $X \in \{3,12,7\}$, then X cannot be equal to
 (a) 3 (b) 7 (c) 15 (d) 12
- 6 The result of subtracting $7y-6$ from $3y+7$ is
 (a) $10y + 13$ (b) $-4y + 13$ (c) $4y + 13$ (d) $2y + 5$
- 7 If the median is the seventh, then the number of values is
 (a) 7 (b) 13 (c) 14 (d) 15
- 9 If $A \subset B$, then $A \cup B =$
 (a) B (b) A (c) $\emptyset$ (d) other
- 10 A man distributed 15,000 pounds to two people in a ratio of 2:3 what is the share of each of them ?
 (a) 5000 , 10000 (b) 6000 , 9000 (c) 7000 , 8000 (d) 12000 , 3000
- 11 $(-8) + (-3) =$
 (a) 11 (b) 3 (c) -11 (d) 8
- 12 The projection of the point $(-2,0)$ on the X-axis is
 (a) $(-2,0)$ (b) $(0,0)$ (c) $(0,2)$ (d) $(2,0)$
- 13 Two integers whose product is -4 and whose sum is 0, what are the two numbers ?
 (a) 1, -4 (b) -1, 4 (c) -2, 2 (d) 0, 4



- 14 If $A = \{2, 4, 1\}$, $B = \{3, 1, 4\}$ then $A \cap B = \dots$
- a {1,4} b {1} c {4} d $\emptyset$
- 15 If the distance between Cairo and Damietta is 400 Km in reality and the distance between them on the map is 8 Cm, Find the scale of this map ?
- a 1 : 50,000 b 1 : 500,000 c 1 : 5,000,000 d 1 : 50,000,000
- 16 The additive inverse of the expression $7a - 2b + 9$
- a $-7a - 2b - 9$ b $-7a + 2b - 9$
c $7a - 2b - 9$ d $-7a + 2b + 9$
- 17 The number of subsets of a set containing 4 elements is equal to set.
- a 4 b 8 c 16 d 32
- 18 Number of triangles in a pentagon =
- a 7 b 5 c 4 d 3
- 19 If point (2,5) is the midpoint of AB where A is (4,1) then B =
- a (0,9) b (3,3) c (8,10) d (1,4)
- 20 If the map scale is 1 : 1,000,000 and the real distance between two points is 45 Km , what is the distance between the two points in Cm ?
- a 450 b 4.5 c 45 d 4500
- 21 Which of the following are like algebraic terms ?
- a X,2 b x^2, y^2 c $3a, 8a$ d 7, 7X
- 22 4 {1,2,5}
- a $\in$ b $\notin$ c $\subset$ d $\not\subset$
- 23 If the arithmetic mean of the values 3,4,5,6,x is 4 then x =
- a 2 b 3 c 4 d 5
- 24 is dividing two or more things into known proportions.
- a Drawing scale b Proportion c Ratio d Mean
- 25 Any triangle has at least two angles.
- a acute b right c obtuse d other
- 26 The midpoint of (3,1), (3,-1) is
- a (0,6) b (6,0) c (3,0) d (0,3)



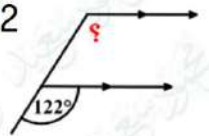
- 27 How many subsets of the set $B = \{3, 7\}$?
 (a) 2 (b) 4 (c) 6 (d) 8
- 28 $10 + [-8] = \dots\dots$
 (a) -2 (b) 2 (c) 18 (d) 8
- 29 If the price of a dress is 810 pounds after the discount, and if the discount rate is 10% of the original price, calculate the price of the dress before the discount?
 (a) 891 (b) 900 (c) 960 (d) 860
- 30 If $2x=2$, then $3x-1 = \dots\dots$
 (a) 3 (b) 1 (c) 4 (d) 2
- 31 Vertically opposite angles are complementary, each of which has a measure of $\dots\dots\dots^\circ$
 (a) 180 (b) 45 (c) 90 (d) 30
- 32 If the arithmetic mean of the numbers $x+1, 8, 4+2x, x-5, x+2$ is 7, then $x=\dots\dots$
 (a) 6 (b) 5 (c) 4 (d) 3
- 33 Which of the following equation has no solution in Z ?
 (a) $6x=24$ (b) $6x=18$ (c) $6x=15$ (d) $6x=12$
- 34 If the price of a commodity decreases from 1500 pounds to 1200 pounds , what is the rate of reduction ?
 (a) 30 % (b) 20 % (c) 15 % (d) 3 %
- 35 The algebraic expression that expresses " twice the number a plus 7 " is
 (a) $2b+7$ (b) $2a-7$ (c) $2a+7$ (d) $7a$
- 36 Number of axes of symmetry of an isosceles trapezium =
 (a) 3 (b) 2 (c) 1 (d) 0
- 37 If ABCD is a parallelogram and $m(\angle C) + m(\angle A) = 140^\circ$, then the $m(\angle B)$ is
 (a) 220 (b) 40 (c) 110 (d) 70
- 38 The sum of the measures of the angles around the center of the circle = $\dots\dots\dots^\circ$
 (a) 50 (b) 360 (c) 180 (d) 90
- 39 Which of the following products has a positive sign ?
 (a) -4×5 (b) 12×0 (c) $(-5) \times (-4)$ (d) $(-2) \times 7$
- 40 $-2n + 3(n-1) = \dots\dots\dots$
 (a) $n-3$ (b) $5-n$ (c) $-3-n$ (d) $n-6$



- 41 An amount of 600 pounds was divided between two persons in a ratio 2:4 , what is the share of the smallest ?
 (a) 400 (b) 300 (c) 200 (d) 100
- 42 13 Q
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 43 $\frac{1}{5} + 60\% = \dots\dots\dots$
 (a) 0 (b) $1\frac{1}{5}$ (c) 65 % (d) $\frac{4}{5}$
- 44 If $\frac{12}{15} = \frac{2x}{5}$, then $3x = \dots\dots\dots$
 (a) 12 (b) 6 (c) 18 (d) 9
- 47 The diagonals are perpendicular and not equal in length in
 (a) Rhombus (b) Rectangle (c) Square (d) parallelogram
- 48 5 The set of prime numbers
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 49 Which of the following sides cannot be the lengths of the sides of a triangle ?
 (a) 9cm,7cm,5cm (b) 7cm,7cm,7cm (c) 3cm,4cm,7cm (d) 4cm,7cm,7cm
- 50 Lara multiplied two integers together and she got the result (-36) , which of the following has this result ?
 (a) 3×-12 (b) -4×-9 (c) -3×-12 (d) 4×9
- 51 If $\frac{5}{15} = \frac{x-2}{6}$, then $x = \dots\dots\dots$
 (a) 0 (b) 2 (c) 4 (d) 6
- 52 $\frac{-2}{11} \times 5\frac{1}{2} = \dots\dots\dots$
 (a) $6\frac{-3}{5}$ (b) 1 (c) -1 (d) $\frac{-2}{11}$
- 53 $5 + (-5) = 0$ (..... property)
 (a) Additive inverse (b) Commutative (c) Associative (d) Additive identity
- 54 Constant term in algebraic expression $3x + 7y + 8$ is
 (a) 5 (b) 7 (c) 3 (d) 8
- 55 Which of the following equal $5a$?
 (a) $3a - 10$ (b) $3a + 2$ (c) $2a + 3a$ (d) $2a + 3$



- 56 Which of the following drawing scales is equivalent to "every 1 cm in the drawing representing 6.5 km in reality" ?
 (a) 1 : 6,500,000 (b) 1 : 650,000 (c) 1 : 6500 (d) 1 : 6.5
- 57 $5 + |-7| = \dots$
 (a) -12 (b) 5 (c) 7 (d) 12
- 58 From the opposite figure, the measure of the unknown angle =
 (a) 100° (b) 122° (c) 58° (d) 180°
- 59 Which mathematical formula expresses the area (A) of a parallelogram with base length (L) and corresponding height (h)?
 (a) $A = \frac{1}{2} Lh$ (b) $A = L + h$ (c) $A = Lh$ (d) $A = \frac{L}{H}$
- 60 Multiplicative inverse of $2\frac{1}{3}$ is
 (a) $\frac{1}{3}$ (b) $\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $-2\frac{1}{3}$
- 61 $-16 + \dots = 0$
 (a) -16 (b) 0 (c) 16 (d) 1
- 62 Which of the following products of subtraction has a positive sign?
 (a) $4-7$ (b) $6-6$ (c) $10-13$ (d) $7-(-4)$
- 63 The multiplicative identity in the set of integers is
 (a) 0 (b) 1 (c) -1 (d) other
- 64 Saif added two integers and the result was (-2), so what two numbers could have added them together?
 (a) 1, 1 (b) 2, 3 (c) 3, -5 (d) -3, 5
- 65 If $x = |-6|$, $y = -5$ then $Y \times X = \dots$
 (a) 30 (b) 11 (c) -30 (d) -11
- 66 $-65 \div (-13) = \dots$
 (a) 13 (b) 5 (c) 65 (d) -5
- 67 Which of the following ratios is not equivalent to $\frac{1}{4}$?
 (a) $\frac{2}{8}$ (b) $\frac{4}{16}$ (c) $\frac{16}{18}$ (d) $\frac{6}{24}$
- 68 $Q \cup Z = \dots$
 (a) Z (b) N (c) $\emptyset$ (d) Q



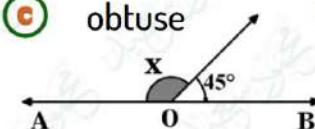
- 69 If the arithmetic mean of six consecutive even numbers is 35, then the smallest of these values =
- a 36 b 34 c 32 d 30
- 70 Which of the following scale drawing represents a minimization ?
- a 70 : 1 b 1 : 7000 c 500 : 1 d 7000 : 1
- 71 The result of adding the two expressions $2x-4y+6$ and $-3x+4y-6$ is
- a $10y+1$ b $-x$ c $-x-12$ d $5y$
- 72 If $x > 0$ and $y < 0$, in which quadrant does the point $(-x, -y)$ lie
- a First b Second c Third d Fourth
- 73 If the length in the drawing is 8 cm and the real length is 320 km, what is the scale of the drawing?
- a 1 : 8,000,000 b 1 : 400,000 c 1 : 800,000 d 1 : 4,000,000
- 74 The sum of measures of the interior angles of a hexagon equals
- a 120 b 540 c 720 d 360
- 75 Which of the following is a solution to the equation: $2(x-5) = 0$ in $\mathbb{Q}$?
- a 0 b 5 c -5 d 10
- 76 The diagonals of a rectangle are
- a perpendicular b Equal in length c Equal in length and perpendicular d Bisect the interior angles
- 77 Additive inverse of $|-9|$ =
- a 9 b -9 c $\frac{1}{9}$ d $\frac{1}{-9}$
- 78 For a set of values : If $\sum f = 10$ and $\sum (f.x) = 40$, then what is the value of $\bar{x}$?
- a 4 b 50 c 30 d 400
- 79 The angle of an interior regular polygon with 10 sides is equal to°
- a 108 b 120 c 144 d 135
- 80 If the mean of five integers is 16, the median is 17, and the mode is 13, then the largest of these numbers is
- a 18 b 19 c 28 d 29
- 81 The sum of the measures of angles around a point equals the measure of
- a 2 right angles b 3 right angles c 4 right angles d 5 right angles
- 82 If the ratio among the measures of 3 angles around a point is 4 : 3 : 2, then the measure of the smaller angle is°
- a 40° b 80° c 160° d 200°



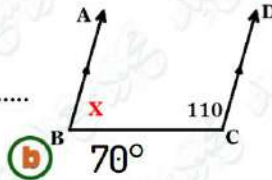
- 83 If ABCD is a parallelogram then what is the value of x in the opposite figure ?



- 84 Saif's age now X is a year, and his age four years ago was 20 years, which of the following equations represents the previous situation?
- 85 $|-24| \div |-8| = \dots\dots$
- 86 If $A = \{3, 2, 4, 8\}$, then $3 \dots\dots A$
- 87 If ABCD is a square, then the angle of ABC is $\dots\dots^\circ$
- 88 The obtuse angle is complemented by the angle of $\dots\dots\dots$
- 89 If the point (a, b) lies in the third quadrant, then the point $(-2a, b-6)$ lies in the $\dots\dots\dots$ quadrant.
- 90 Two vertically opposite angles, one $3X$ and the other 120° , then $x = \dots\dots$
- 91 Two complementary angles, the ratio between their measures is $5 : 7$. Find the measure of the smaller angle $\dots\dots\dots$
- 92 The solution set of the equation $2X + 3 = 13$, if the substitution set is $\{4, 5, 3\}$?
- 93 Two consecutive integers have a sum of 23, which of the following equations expresses this?
- 94 The measure of the central angle of the sector whose area is $\frac{1}{3}$ of the area of the circle = $\dots\dots^\circ$
- 95 A triangle measuring two angles in which $65^\circ, 25^\circ$ the type of triangle relative to its angles
- 96 In the opposite figure : If $O \in \overleftrightarrow{AB}$, then $x = \dots\dots$



97 In the opposite figure, $X = \dots$



(a) 60°

(b) 70°

(c) 110°

(d) 180°

98 $a + a + a + a = \dots$

(a) $4a^4$

(b) a^4

(c) $4 + a$

(d) $4a$

99 Express the sum of two consecutive odd numbers is 21

(a) $m + m + 2 = 21$

(b) $m - m - 2 = 21$

(c) $2m - 1 = 21$

(d) $m + 2 = 21$

100 If an insect in the picture is 4 cm long and its real length is 2 mm, then the scale =

(a) $20 : 1$

(b) $22 : 1$

(c) $1 : 20$

(d) $1 : 22$

101 If $\frac{m}{20} = \frac{4}{y}$, then $2(m \times y) = \dots$

(a) 100

(b) 80

(c) 160

(d) 120

102 Write two rational numbers equal to the number $|\frac{2}{5}| = \dots$

(a) $\frac{6}{15}, \frac{4}{10}$

(b) $\frac{6}{21}, \frac{9}{21}$

(c) $\frac{20}{30}, \frac{27}{30}$

(d) $\frac{2}{3}, \frac{1}{3}$

103 The opposite diagram shows the scale of a map. If the distance between two cities on this map is 5 cm, what is the real distance between them



(a) 200

(b) 120

(c) 100

(d) 400

104 $3(2x - 5) - 4(x - 6) = \dots$

(a) $2x - 30$

(b) $2x + 3$

(c) $2x + 9$

(d) $x + 3$

105 Two numbers have a ratio of $2 : 5$, so if the smallest number is 48, what is the largest number =

(a) 130

(b) 148

(c) 100

(d) 120

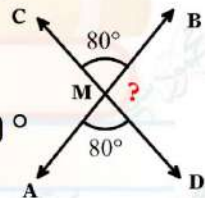
106 In the opposite figure : if $\{M\} = \overline{AB} \cap \overline{CD}$, then what is the value of "?"

(a) 80°

(b) 100°

(c) 120°

(d) 180°



107 Find the solution set in $\mathbb{Q}$ for the equation $3(x - 5) = -18$

(a) $\{1\}$

(b) $\{-1\}$

(c) $\{2\}$

(d) $\{-2\}$

108 What is the type of angle measuring $179^\circ 60'$

(a) right

(b) acute

(c) Obtuse

(d) straight

109 Express with an equation, two consecutive odd numbers sum equal to 100.

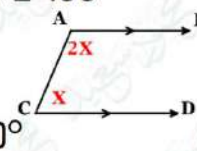
(a) $m + m + 1 = 100$

(b) $m + 1 = 100$

(c) $m + 2 = 100$

(d) $m + m + 2 = 100$

110 In the opposite figure, find the value of X



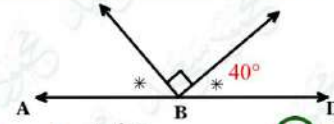
(a) 30°

(b) 60°

(c) 90°

(d) 180°

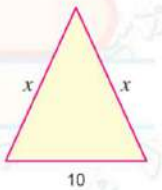
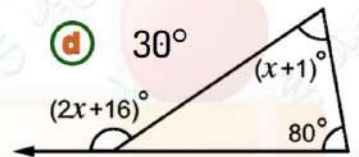




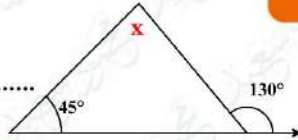
- 111 In the opposite figure, What is the type of angle ?
 (a) right (b) reflex (c) straight (d) obtuse
- 112 Express the following situation with an equation: Ziad's age now X years and 7 years ago was 18 years old
 (a) $X+7=18$ (b) $x-7=18$ (c) $X+7=25$ (d) $x-7=25$
- 113 If $B = \{7, 8, 0\}$, then the number of all subsets of B is
 (a) 2 (b) 4 (c) 6 (d) 8
- 114 The constant term in the algebraic expression $6n - 5n - 9$ is
 (a) 9 (b) -9 (c) -5 (d) 5
- 115 The multiplication inverse of $-3\frac{1}{2}$ is
 (a) $\frac{7}{2}$ (b) $-\frac{7}{2}$ (c) $\frac{2}{7}$ (d) $-\frac{2}{7}$
- 116 If $x : 36 = 25 : 20$, then what is the value of x
 (a) 45 (b) 36 (c) 900 (d) 25
- 117 The solution set for : $13 + 5x = 3$ in N is
 (a) $\{-2\}$ (b) $\{2\}$ (c) $\{-10\}$ (d) $\emptyset$
- 118 The reciprocal of the number $0.\overline{36}$ is
 (a) $\frac{4}{11}$ (b) $-\frac{4}{11}$ (c) $4\frac{2}{3}$ (d) $2\frac{3}{4}$
- 119 $9 \dots \{2, 8, 7\}$
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 120 $(-4) \times (-8) \times 25 \times (-125) = \dots$
 (a) -1000 (b) 10,000 (c) -100,000 (d) -100
- 121 The median of the values 7,8,9,4,6,2 is
 (a) 9 (b) 6.5 (c) 7 (d) 13
- 122 The type of the angle that supplements an obtuse angle is
 (a) Right angles (b) Acute angle (c) Zero angle (d) other
- 123 $-7 \times 99 = \dots$
 (a) 693 (b) 735 (c) -693 (d) -735
- 124 If $A = \{5, 7\}$, the number of subsets of the set A is
 (a) 2 (b) 4 (c) 6 (d) 8
- 125 If the length of a road on a map drawn to a scale as $1 : 900,000$ is 11 cm, the real length of the road in kilometres is
 (a) 9 (b) 5 (c) 90 (d) 99



- 126 The mode of the number : 5,4,6,8,4,5,4,8 is
- a 6 b 4 c 5 d 8
- 127 The measure of the central angle of the circular sector which represent 30 % of the area of the circle is
- a 180° b 108° c 118° d 72°
- 128 If 15 % of x equals 20 % of y , the ratio of x : y is
- a 5:4 b 3:2 c 4:3 d 3:4
- 129 The number of axes of symmetry of a regular hexagon is
- a 2 b 4 c 6 d 8
- 130 The projection of the point [-7 , 3] on the y - axis is
- a [0 , -3] b [3 , -7] c [0 , 3] d [0 , 0]
- 131 $\frac{6}{37} \times 7 + \frac{6}{37} \times 5 + \frac{6}{37} \times (-11) = \dots\dots\dots$
- a $\frac{6}{37}$ b $\frac{12}{37}$ c 100 d -11
- 132 Subtracting $8x - 7y$ from $5x - 2y$ the result is
- a $-3x - 5y$ b $3x + 5y$ c $3x - 5y$ d $5y - 3x$
- 133 If $\frac{8}{x+4} = \frac{3}{9}$ the value of x is
- a 8 b 9 c 10 d 20
- 134 If $\angle X$ is complementary to $\angle Y$, and $M(\angle X) = 2 M(\angle Y)$, then the measure of $\angle Y$ is
- a 120° b 60° c 45° d 30°
- 135 In the opposite figure the value of X is
- a 65° b 88° c 120° d 55°
- 136 If the perimeter of triangle is 34 in the opposite figure , then the value of X is
- a 14 b 24 c 12 d 10
- 137 If $\frac{14}{x} = \frac{y}{7}$, then $xy = \dots\dots\dots$
- a 14 b 80 c 98 d 7
- 138 If 13,500 tourists represent 12 % of a tourists group , then the number of tourists in the entire group is tourists.
- a 100,250 b 110,200 c 112,500 d 13,500
- 139 Hesham packed 100 cardboard boxes in 2.5 hours. It would take Hesham Hours to pack 160 boxes , working at the same rate.
- a 2 b 4 c 8 d 9



Find the value of X



140

a 85°

b 45°

c 130°

d 180°

141

$-2 - (-3) = \dots\dots\dots$

a -1

b 1

c -5

d 5

142

$24\frac{1}{3}\% + \dots\dots\dots = 0.\bar{3}$

a 8%

b 9%

c 10%

d 11%

143

The value of the expression $(4x - 10)$ at $x = -1$ equals

a 10

b -14

c 14

d -10

144

If Omar has x ten-pound banknotes in addition to 1 one-hundred-pound banknotes, and the total amount of Omar's money is 330 pounds, then $x = \dots\dots\dots$

a 20

b 30

c 33

d 23

145

A parallelogram with a base length of 12 cm, its corresponding height is $(3x-1)$ cm and its area is 60 squared centimeters, then $x = \dots\dots\dots$

a 2

b 4

c 6

d 8

146

$5x - (-4x) = \dots\dots\dots$

a $-x$

b x

c $-9x$

d $9x$

147

180 pounds are to be divided between two persons in the ratio 7 : 5, the larger share is

a 135 pounds

b 105 pounds

c 75 pounds

d 60 pounds

148

If the arithmetic mean of five integers is 14, the median is 15, and the mode is 11, then the greatest of these integers is

a 19

b 14

c 17

d 18

149

The simplest form of the expression $a + a + b + a + b$ is

a $3a + 2b$

b $3a + b + b$

c $a^3 + 2b$

d $a^3 + b^2$

150

If $A = \{1, 3, 5\}$ and $B = \{2, 3, 4\}$, then $A \cap B = \dots\dots\dots$

a $\{1\}$

b $\{2\}$

c $\{1, 2\}$

d $\{3\}$

151

The measure of each interior angle in a regular octagon is

a 144°

b 135°

c 180°

d 120°

152

From the following table, the measure of central angle corresponding to the coffee sector is

Drink	Coffee	Tea	juices
people	150	350	100

a 45°

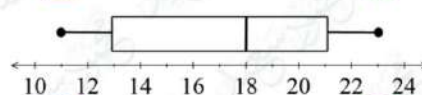
b 90°

c 120°

d 150°

153

From the adjacent box plot, the range is



a 10

b 12

c 14

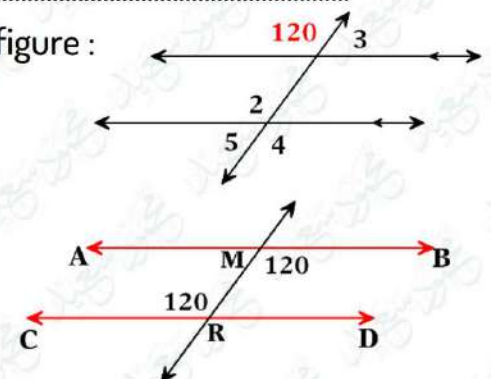
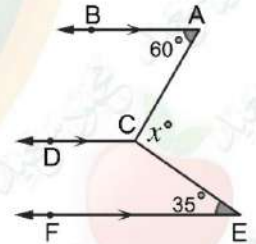
d 16



Question 02

Answer the following questions

- 1 If $a = 3$, $b = -3$ and $c = 2$, find the result of each of the following :
- $2a + b + c$
 - $3b + 5c$
 - $ab - 5c$
- 2 A picture of a butterfly with a real length of 2.5 cm and a length in the picture of 2 metres, find the scale of the drawing?
- 3 A factory produces 1500 lamps in 3 hours, calculate the production rate of the factory in two hours?
- 4 A school with $(8X + 15)$ girls and $(7X - 10)$ boys, write a mathematical expression that shows how many more girls there are than boys in this school.
- 5 With proof find the value of X in the opposite figure :
- 6 Ahmed bought 10 apples for 70 pounds, how many apples of the same type can he buy for 98 pounds?
- 7 If the number of students in a school is 650 and the ratio between the number of boys to the number of girls is 6 : 7, calculate the increase in the number of girls compared to the number of boys?
- 9 Find the measures of the numbered angles in the opposite figure :
- 10 In the opposite figure , prove that $\overrightarrow{AB} \parallel \overrightarrow{CD}$:

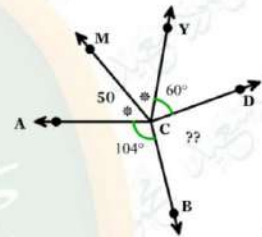


11 A football field is rectangular shape, and its length is 15 meters less than twice its width. If its perimeter is 330 meters , find the dimensions of the field.

12 If the price of a mobile phone in store is 12,750 LE and its price was reduced by 8 % , what will be the price after the discount ?

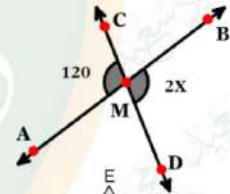
13 Write all the subsets of the set $B = \{ 2 , 7 , 9 \}$ and state their number.

14 In the opposite figure, find $M (\angle BCD) :$



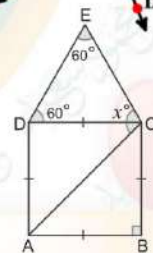
15 Add the two algebraic expressions : $3x + 2y$ and $5y - 6x + 2$, then find the numerical value of the result when $x = 3$, $y = -1$

16 If $\overrightarrow{CD} \cap \overrightarrow{AB} = \{M\}$, Find the value of X

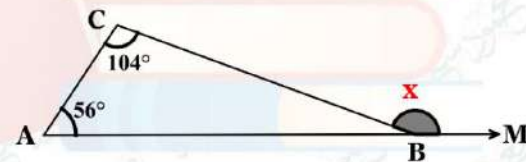


Find with proof the value of X ?

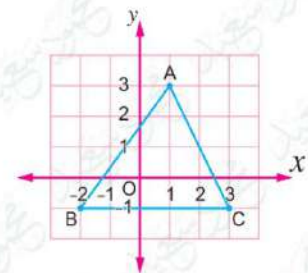
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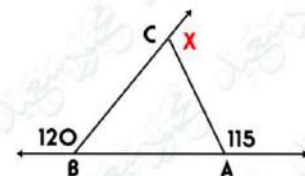
18 Find with proof the value of X ?



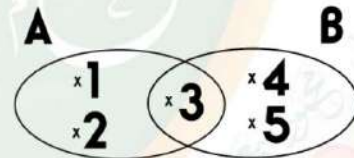
19 In the opposite figure find the coordinates of A, C and B and find the area of triangle?



20 In the opposite figure find the value of X ?



- 21 What is the decrease of : $7a - 2b + 5c$ than $(3b - 5a + c)$?
- 22 An object on Earth weighs 90 Newton, so if you know that its weight on the Moon is 15 Newton, how much does another body weigh on the Moon if its weight on Earth is 60 Newton?
- 23 If 100 grams of chocolate gives 300 calories, find the number of calories in 30 grams of the same type of chocolate?
- 24 Find the value of A and B in the sets $\{4, 3, 7, A\} = \{5, B, 3, 7\}$?
- 25 If the price of fridge last year was 6,250 LE, and its price increased this year to 7,000 LE, find the rate of increase?
- 26 From the given shape , determine :
- 1) A , B
 - 2) $A \cup B$
 - 3) $A \cap B$
- 27 Saif bought a car for 100,000 pounds and then sold it with a gain of 5% of the purchase price, calculate the selling price of Saif for the car after the increase ?
- 28 If $Y = \frac{4}{9}$, $X = \frac{-2}{9}$, then find $2X + Y$ in simplest form.
- 29 If $A = 3$, $B = [-3]$, $C = 2$, then find :
- 1) $(A \times B) \div C$
 - 2) $(B \div C) \times A$



- 30 If the ratio between the side lengths of a triangle with a perimeter of 150 cm is 3 : 5 : 7, calculate the length of its largest side?

.....

- 31 Represent in a Venn diagram :

$$A = \{7, 9\}, B = \{7, 6, 5\}$$

.....

- 32 A person distributed an amount of money to three people, so he gives the first $(7 + x)$ pounds, and give the second $(1 + x3)$ pounds, and the third, $(2 - x2)$ pounds, write in the simplest form the algebraic amount that expresses the amount that was distributed, and if $x = 10$, what is the value of this amount ?

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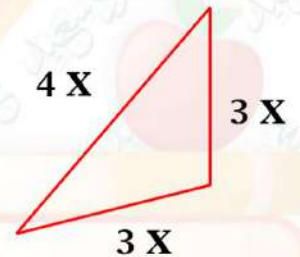
- 33 A liquid whose temperature was 20 degrees below zero , after heating its temperature raised by 8 degrees Celsius, calculate the temperature of the liquid after heating?

.....

- 34 Use the properties of addition in Z to find: $17 + 32 + (-17)$

.....

- 35 Find the mathematical expression representing the perimeter of the opposite triangle in the simplest form , then find its numerical value at $X = 2$



- 36 Four people bought tickets to enter the Egyptian Museum in Cairo, and they also bought souvenirs for 500 pounds, if the total cost is 620 pounds, write an equation that represents this situation, what is the price of one ticket?

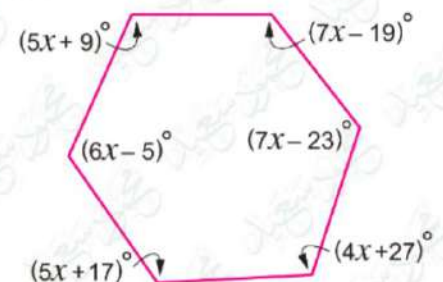
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- 37 From the opposite figure find the value of X ?

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.....

.....

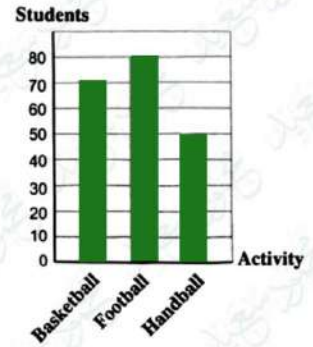


38

The opposite bar graph shows the distribution of students in summer activities according to their preferences. Fill in the table below And then represent this data using a pie chart :

Activity	Basketball	Foot ball	handball
percentages	 %	 %	 %

.....

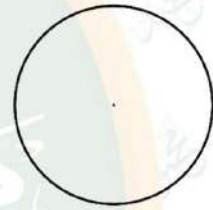


39

The opposite table represents the number of votes each of Khaled , Anas and Hamza gained in the classroom election. Use a pie chart to represent this data :

Student name	khaled	Anas	Hamza
Number of votes	8	12	10

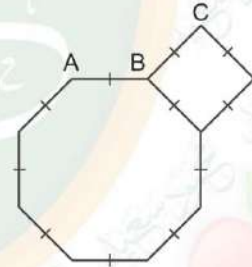
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40

From the opposite figure find $M(\angle ABC)$?

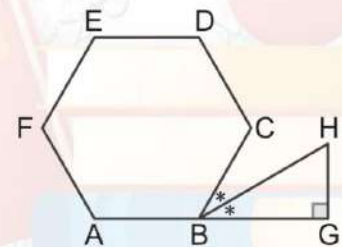
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41

Find the $M(\angle H)$?

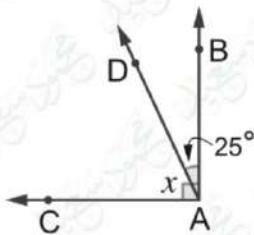
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Question 03

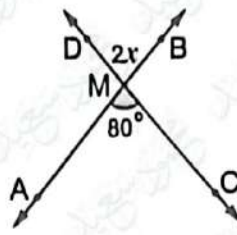
Find the value of X

1



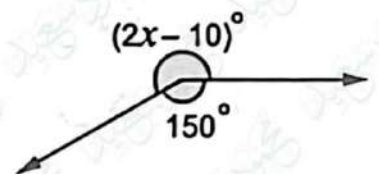
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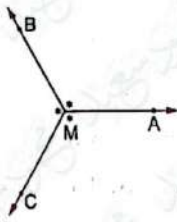
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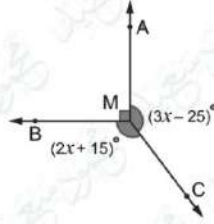
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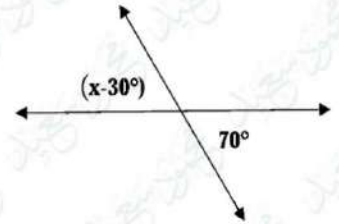
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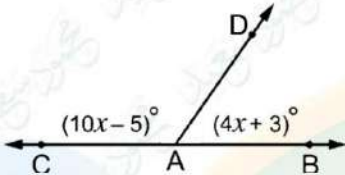
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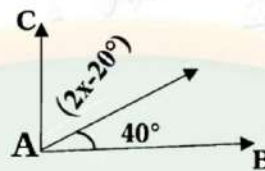
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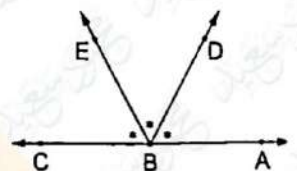
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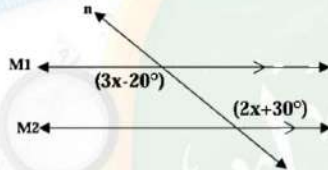
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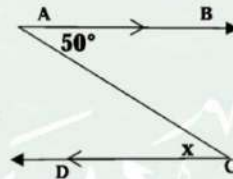
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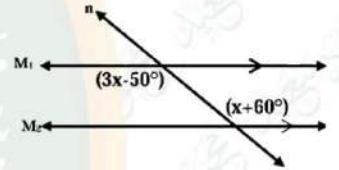
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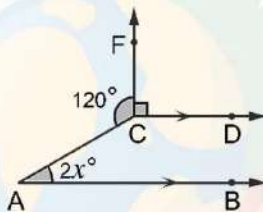
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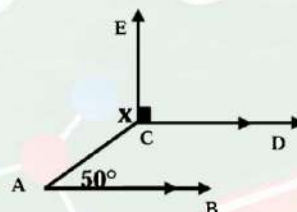
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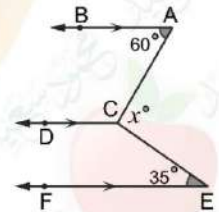
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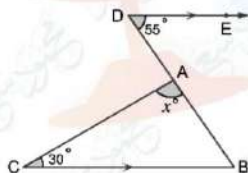
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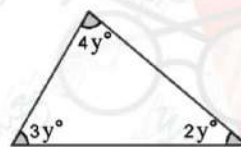
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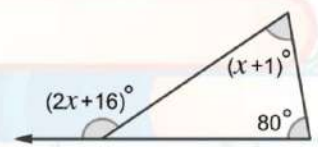
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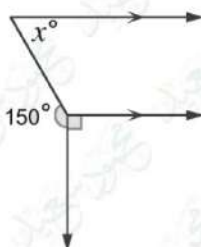
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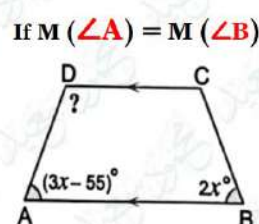
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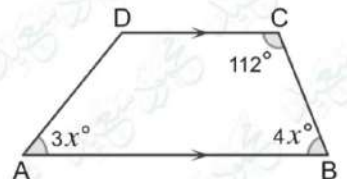
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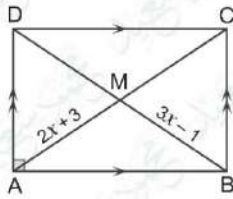
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21

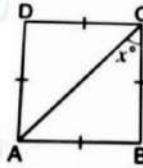


- 22** In the opposite rectangle find the value of X



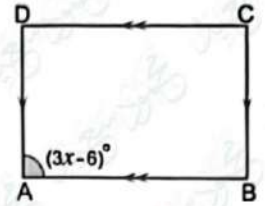
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- 23** In the opposite square find the value of X



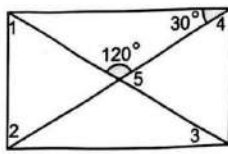
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- 24** In the opposite rectangle find the value of X



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.....

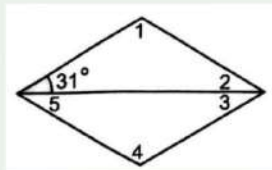
- 25** Find the measure of the numbered angles :



Rectangle

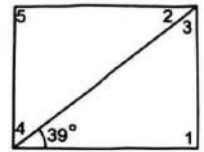
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- 26** Find the measure of the numbered angles :



.....
.....

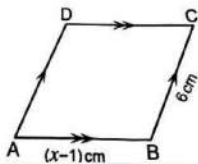
- 27** Find the measure of the numbered angles :



Rectangle

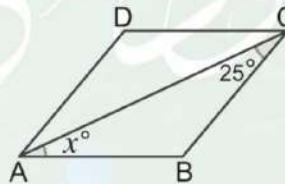
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- 28** In a Rhombus :



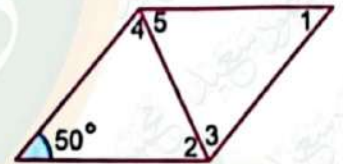
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- 29** In a Rhombus :



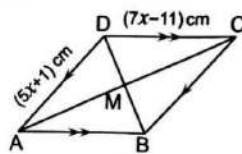
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- 30** In a Rhombus :



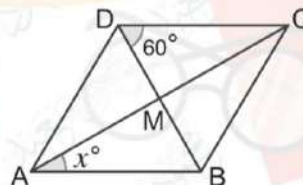
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- 31** In a Rhombus :



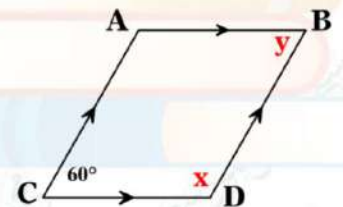
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- 32** In a Rhombus :

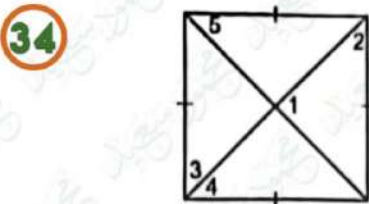


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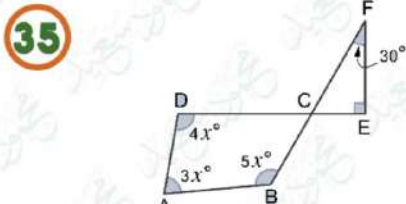
- 33** Find the value of X and Y



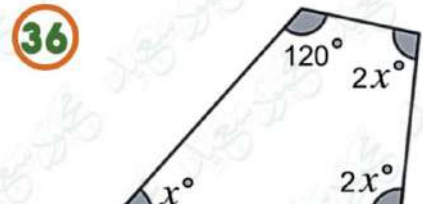
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تم بحمد الله ،





First term Questions Bank



Question 01

Choose the correct answer

- 1 The arithmetic mean of the values 6,4,7,3 is
☐ a 4 ☐ b 20 ☐ c 5 ☐ d 5.5
- 2 The circular sector that represents the area of the circle °
☐ a 360 ☐ b 180 ☐ c 90 ☐ d 40
- 3 If $X \notin \{7,2,5\}$, which of the following can be X ?
☐ a 2 ☐ b 7 ☐ c 1 ☐ d 5
- 4 If $\{X,3\} = \{5,Y\}$, what is the value $X+Y$?
☐ a 15 ☐ b 8 ☐ c 3 ☐ d 5
- 5 If $X \in \{3,12,7\}$, then X cannot be equal to
☐ a 3 ☐ b 7 ☐ c 15 ☐ d 12
- 6 The result of subtracting $7y-6$ from $3y+7$ is
☐ a $10y + 13$ ☐ b $-4y + 13$ ☐ c $4y + 13$ ☐ d $2y + 5$
- 7 If the median is the seventh, then the number of values is
☐ a 7 ☐ b 13 ☐ c 14 ☐ d 15
- 9 If $A \subset B$, then $A \cup B =$
☐ a B ☐ b A ☐ c $\emptyset$ ☐ d other
- 10 A man distributed 15,000 pounds to two people in a ratio of 2:3 what is the share of each of them ?
☐ a 5000 , 10000 ☐ b 6000 , 9000 ☐ c 7000 , 8000 ☐ d 12000 , 3000
- 11 $(-8) + (-3) =$
☐ a 11 ☐ b 3 ☐ c -11 ☐ d 8
- 12 The projection of the point $(-2,0)$ on the X-axis is
☐ a $(-2,0)$ ☐ b $(0,0)$ ☐ c $(0,2)$ ☐ d $(2,0)$
- 13 Two integers whose product is -4 and whose sum is 0, what are the two numbers ?
☐ a 1, -4 ☐ b -1, 4 ☐ c -2, 2 ☐ d 0, 4



- 14 If $A = \{2, 4, 1\}$, $B = \{3, 1, 4\}$ then $A \cap B = \dots$
 (a) $\{1, 4\}$ (b) $\{1\}$ (c) $\{4\}$ (d) $\emptyset$
- 15 If the distance between Cairo and Damietta is 400 Km in reality and the distance between them on the map is 8 Cm, Find the scale of this map ?
 (a) 1 : 50,000 (b) 1 : 500,000 (c) 1 : 5,000,000 (d) 1 : 50,000,000
- 16 The additive inverse of the expression $7a - 2b + 9$
 (a) $-7a - 2b - 9$ (b) $-7a + 2b - 9$
 (c) $7a - 2b - 9$ (d) $-7a + 2b + 9$
- 17 The number of subsets of a set containing 4 elements is equal to set.
 (a) 4 (b) 8 (c) 16 (d) 32
- 18 Number of triangles in a pentagon =
 (a) 7 (b) 5 (c) 4 (d) 3
- 19 If point (2,5) is the midpoint of AB where A is (4,1) then B =
 (a) $(0, 9)$ (b) $(3, 3)$ (c) $(8, 10)$ (d) $(1, 4)$
- 20 If the map scale is 1 : 1,000,000 and the real distance between two points is 45 Km , what is the distance between the two points in Cm ?
 (a) 450 (b) 4.5 (c) 45 (d) 4500
- 21 Which of the following are like algebraic terms ?
 (a) X, 2 (b) x^2, y^2 (c) $3a, 8a$ (d) 7, 7X
- 22 4 $\{1, 2, 5\}$
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 23 If the arithmetic mean of the values 3, 4, 5, 6, x is 4 then x =
 (a) 2 (b) 3 (c) 4 (d) 5
- 24 is dividing two or more things into known proportions.
 (a) Drawing scale (b) Proportion (c) Ratio (d) Mean
- 25 Any triangle has at least two angles.
 (a) acute (b) right (c) obtuse (d) other
- 26 The midpoint of (3,1), (3,-1) is
 (a) $(0, 6)$ (b) $(6, 0)$ (c) $(3, 0)$ (d) $(0, 3)$



- 27 How many subsets of the set $B = \{3, 7\}$?
 (a) 2 (b) 4 (c) 6 (d) 8
- 28 $10 + [-8] = \dots\dots$
 (a) -2 (b) 2 (c) 18 (d) 8
- 29 If the price of a dress is 810 pounds after the discount, and if the discount rate is 10% of the original price, calculate the price of the dress before the discount?
 (a) 891 (b) 900 (c) 960 (d) 860
- 30 If $2x=2$, then $3x-1 = \dots\dots$
 (a) 3 (b) 1 (c) 4 (d) 2
- 31 Vertically opposite angles are complementary, each of which has a measure of $\dots\dots\dots^\circ$
 (a) 180 (b) 45 (c) 90 (d) 30
- 32 If the arithmetic mean of the numbers $x+1, 8, 4+2x, x-5, x+2$ is 7, then $x=\dots\dots$
 (a) 6 (b) 5 (c) 4 (d) 3
- 33 Which of the following equation has no solution in Z ?
 (a) $6x=24$ (b) $6x=18$ (c) $6x=15$ (d) $6x=12$
- 34 If the price of a commodity decreases from 1500 pounds to 1200 pounds , what is the rate of reduction ?
 (a) 30 % (b) 20 % (c) 15 % (d) 3 %
- 35 The algebraic expression that expresses " twice the number a plus 7 " is
 (a) $2b+7$ (b) $2a-7$ (c) $2a+7$ (d) $7a$
- 36 Number of axes of symmetry of an isosceles trapezium =
 (a) 3 (b) 2 (c) 1 (d) 0
- 37 If ABCD is a parallelogram and $m(\angle C) + m(\angle A) = 140^\circ$, then the $m(\angle B)$ is
 (a) 220 (b) 40 (c) 110 (d) 70
- 38 The sum of the measures of the angles around the center of the circle = $\dots\dots\dots^\circ$
 (a) 50 (b) 360 (c) 180 (d) 90
- 39 Which of the following products has a positive sign ?
 (a) -4×5 (b) 12×0 (c) $(-5) \times (-4)$ (d) $(-2) \times 7$
- 40 $-2n + 3(n-1) = \dots\dots\dots$
 (a) $n-3$ (b) $5-n$ (c) $-3-n$ (d) $n-6$



- 41 An amount of 600 pounds was divided between two persons in a ratio 2:4 , what is the share of the smallest ?
 (a) 400 (b) 300 (c) 200 (d) 100
- 42 $13 \dots Q$
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 43 $\frac{1}{5} + 60\% = \dots\dots\dots$
 (a) 0 (b) $1\frac{1}{5}$ (c) 65 % (d) $\frac{4}{5}$
- 44 If $\frac{12}{15} = \frac{2x}{5}$, then $3x = \dots\dots\dots$
 (a) 12 (b) 6 (c) 18 (d) 9
- 47 The diagonals are perpendicular and not equal in length in
 (a) Rhombus (b) Rectangle (c) Square (d) parallelogram
- 48 5 The set of prime numbers
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 49 Which of the following sides cannot be the lengths of the sides of a triangle ?
 (a) 9cm,7cm,5cm (b) 7cm,7cm,7cm (c) 3cm,4cm,7cm (d) 4cm,7cm,7cm
- 50 Lara multiplied two integers together and she got the result (-36) , which of the following has this result ?
 (a) 3×-12 (b) -4×-9 (c) -3×-12 (d) 4×9
- 51 If $\frac{5}{15} = \frac{x-2}{6}$, then $x = \dots\dots\dots$
 (a) 0 (b) 2 (c) 4 (d) 6
- 52 $\frac{-2}{11} \times 5\frac{1}{2} = \dots\dots\dots$
 (a) $6\frac{-3}{5}$ (b) 1 (c) -1 (d) $\frac{-2}{11}$
- 53 $5 + (-5) = 0$ (..... property)
 (a) Additive inverse (b) Commutative (c) Associative (d) Additive identity
- 54 Constant term in algebraic expression $3x + 7y + 8$ is
 (a) 5 (b) 7 (c) 3 (d) 8
- 55 Which of the following equal $5a$?
 (a) $3a - 10$ (b) $3a + 2$ (c) $2a + 3a$ (d) $2a + 3$



- 56 Which of the following drawing scales is equivalent to "every 1 cm in the drawing representing 6.5 km in reality" ?
 (a) 1 : 6,500,000 (b) 1 : 650,000 (c) 1 : 6500 (d) 1 : 6.5
- 57 $5 + |-7| = \dots$
 (a) -12 (b) 5 (c) 7 (d) 12
- 58 From the opposite figure, the measure of the unknown angle =
 (a) 100° (b) 122° (c) 58° (d) 180°
- 59 Which mathematical formula expresses the area (A) of a parallelogram with base length (L) and corresponding height (h)?
 (a) $A = \frac{1}{2} Lh$ (b) $A = L + h$ (c) $A = Lh$ (d) $A = \frac{L}{H}$
- 60 Multiplicative inverse of $2\frac{1}{3}$ is
 (a) $\frac{1}{3}$ (b) $\frac{7}{3}$ (c) $\frac{3}{7}$ (d) $-2\frac{1}{3}$
- 61 $-16 + \dots = 0$
 (a) -16 (b) 0 (c) 16 (d) 1
- 62 Which of the following products of subtraction has a positive sign?
 (a) $4-7$ (b) $6-6$ (c) $10-13$ (d) $7-(-4)$
- 63 The multiplicative identity in the set of integers is
 (a) 0 (b) 1 (c) -1 (d) other
- 64 Saif added two integers and the result was (-2), so what two numbers could have added them together?
 (a) 1, 1 (b) 2, 3 (c) 3, -5 (d) -3, 5
- 65 If $x = |-6|$, $y = -5$ then $Y \times X = \dots$
 (a) 30 (b) 11 (c) -30 (d) -11
- 66 $-65 \div (-13) = \dots$
 (a) 13 (b) 5 (c) 65 (d) -5
- 67 Which of the following ratios is not equivalent to $\frac{1}{4}$?
 (a) $\frac{2}{8}$ (b) $\frac{4}{16}$ (c) $\frac{16}{18}$ (d) $\frac{6}{24}$
- 68 $Q \cup Z = \dots$
 (a) Z (b) N (c) $\emptyset$ (d) Q



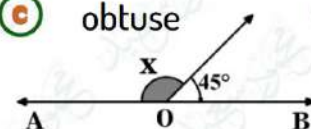
- 69 If the arithmetic mean of six consecutive even numbers is 35, then the smallest of these values =
- a 36 b 34 c 32 d 30
- 70 Which of the following scale drawing represents a minimization ?
- a 70 : 1 b 1 : 7000 c 500 : 1 d 7000 : 1
- 71 The result of adding the two expressions $2x-4y+6$ and $-3x+4y-6$ is
- a $10y+1$ b $-x$ c $-x-12$ d $5y$
- 72 If $x > 0$ and $y < 0$, in which quadrant does the point $(-x, -y)$ lie
- a First b Second c Third d Fourth
- 73 If the length in the drawing is 8 cm and the real length is 320 km, what is the scale of the drawing?
- a 1 : 8,000,000 b 1 : 400,000 c 1 : 800,000 d 1 : 4,000,000
- 74 The sum of measures of the interior angles of a hexagon equals
- a 120 b 540 c 720 d 360
- 75 Which of the following is a solution to the equation: $2(x-5) = 0$ in $\mathbb{Q}$?
- a 0 b 5 c -5 d 10
- 76 The diagonals of a rectangle are
- a perpendicular b Equal in length c Equal in length and perpendicular d Bisect the interior angles
- 77 Additive inverse of $|-9| =$
- a 9 b -9 c $\frac{1}{9}$ d $-\frac{1}{9}$
- 78 For a set of values : If $\sum f = 10$ and $\sum (f.x) = 40$, then what is the value of $\bar{x}$?
- a 4 b 50 c 30 d 400
- 79 The angle of an interior regular polygon with 10 sides is equal to°
- a 108 b 120 c 144 d 135
- 80 If the mean of five integers is 16, the median is 17, and the mode is 13, then the largest of these numbers is
- a 18 b 19 c 28 d 29
- 81 The sum of the measures of angles around a point equals the measure of
- a 2 right angles b 3 right angles c 4 right angles d 5 right angles
- 82 If the ratio among the measures of 3 angles around a point is 4 : 3 : 2, then the measure of the smaller angle is°
- a 40° b 80° c 160° d 200°



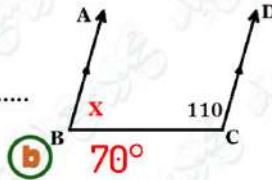
- 83 If ABCD is a parallelogram then what is the value of x in the opposite figure ?



- 84 Saif's age now X is a year, and his age four years ago was 20 years, which of the following equations represents the previous situation?
- 85 $|-24| \div |-8| = \dots\dots$
- 86 If $A = \{3, 2, 4, 8\}$, then $3 \dots\dots A$
- 87 If ABCD is a square, then the angle of ABC is $\dots\dots^\circ$
- 88 The obtuse angle is complemented by the angle of $\dots\dots\dots$
- 89 If the point (a, b) lies in the third quadrant, then the point $(-2a, b-6)$ lies in the $\dots\dots\dots$ quadrant.
- 90 Two vertically opposite angles, one $3X$ and the other 120° , then $x = \dots\dots$
- 91 Two complementary angles, the ratio between their measures is $5 : 7$. Find the measure of the smaller angle $\dots\dots\dots$
- 92 The solution set of the equation $2X + 3 = 13$, if the substitution set is $\{4, 5, 3\}$?
- 93 Two consecutive integers have a sum of 23, which of the following equations expresses this?
- 94 The measure of the central angle of the sector whose area is $\frac{1}{3}$ of the area of the circle = $\dots\dots^\circ$
- 95 A triangle measuring two angles in which $65^\circ, 25^\circ$ the type of triangle relative to its angles
- 96 In the opposite figure : If $O \in \overleftrightarrow{AB}$, then $x = \dots\dots$



97 In the opposite figure, $X = \dots$



(a) 60°

(b) 70°

(c) 110°

(d) 180°

98 $a + a + a + a = \dots$

(a) $4a^4$

(b) a^4

(c) $4 + a$

(d) $4a$

99 Express the sum of two consecutive odd numbers is 21

(a) $m + m + 2 = 21$

(b) $m - m - 2 = 21$

(c) $2m - 1 = 21$

(d) $m + 2 = 21$

100 If an insect in the picture is 4 cm long and its real length is 2 mm, then the scale =

(a) $20 : 1$

(b) $22 : 1$

(c) $1 : 20$

(d) $1 : 22$

101 If $\frac{m}{20} = \frac{4}{y}$, then $2(m \times y) = \dots$

(a) 100

(b) 80

(c) 160

(d) 120

102 Write two rational numbers equal to the number $|\frac{2}{5}| = \dots$

(a) $\frac{6}{15}, \frac{4}{10}$

(b) $\frac{6}{21}, \frac{9}{21}$

(c) $\frac{20}{30}, \frac{27}{30}$

(d) $\frac{2}{3}, \frac{1}{3}$

103 The opposite diagram shows the scale of a map. If the distance between two cities on this map is 5 cm, what is the real distance between them



(a) 200

(b) 120

(c) 100

(d) 400

104 $3(2x - 5) - 4(x - 6) = \dots$

(a) $2x - 30$

(b) $2x + 3$

(c) $2x + 9$

(d) $x + 3$

105 Two numbers have a ratio of $2 : 5$, so if the smallest number is 48, what is the largest number =

(a) 130

(b) 148

(c) 100

(d) 120

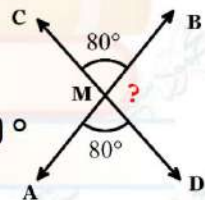
106 In the opposite figure : if $\{M\} = \overline{AB} \cap \overline{CD}$, then what is the value of "?"

(a) 80°

(b) 100°

(c) 120°

(d) 180°



107 Find the solution set in $\mathbb{Q}$ for the equation $3(x - 5) = -18$

(a) $\{1\}$

(b) $\{-1\}$

(c) $\{2\}$

(d) $\{-2\}$

108 What is the type of angle measuring $179^\circ 60'$

(a) right

(b) acute

(c) Obtuse

(d) straight

109 Express with an equation, two consecutive odd numbers sum equal to 100.

(a) $m + m + 1 = 100$

(b) $m + 1 = 100$

(c) $m + 2 = 100$

(d) $m + m + 2 = 100$

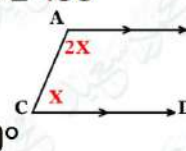
110 In the opposite figure, find the value of X

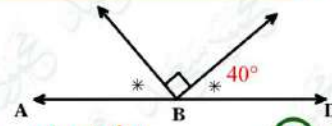
(a) 30°

(b) 60°

(c) 90°

(d) 180°

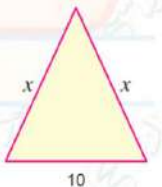
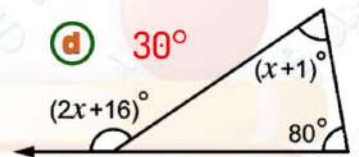




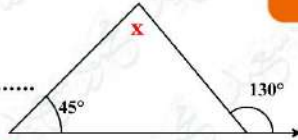
- 111 In the opposite figure, What is the type of angle ?
 (a) right (b) reflex (c) straight (d) obtuse
- 112 Express the following situation with an equation: Ziad's age now X years and 7 years ago was 18 years old
 (a) $X+7=18$ (b) $x-7=18$ (c) $X+7=25$ (d) $x-7=25$
- 113 If $B = \{7, 8, 0\}$, then the number of all subsets of B is
 (a) 2 (b) 4 (c) 6 (d) 8
- 114 The constant term in the algebraic expression $6n - 5n - 9$ is
 (a) 9 (b) -9 (c) -5 (d) 5
- 115 The multiplication inverse of $-3\frac{1}{2}$ is
 (a) $\frac{7}{2}$ (b) $-\frac{7}{2}$ (c) $\frac{2}{7}$ (d) $-\frac{2}{7}$
- 116 If $x : 36 = 25 : 20$, then what is the value of x
 (a) 45 (b) 36 (c) 900 (d) 25
- 117 The solution set for : $13 + 5x = 3$ in N is
 (a) $\{-2\}$ (b) $\{2\}$ (c) $\{-10\}$ (d) $\emptyset$
- 118 The reciprocal of the number $0.\overline{36}$ is
 (a) $\frac{4}{11}$ (b) $-\frac{4}{11}$ (c) $4\frac{2}{3}$ (d) $2\frac{3}{4}$
- 119 $9 \dots \{2, 8, 7\}$
 (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$
- 120 $[-4] \times [-8] \times 25 \times [-125] = \dots$
 (a) -1000 (b) 10,000 (c) -100,000 (d) -100
- 121 The median of the values 7,8,9,4,6,2 is
 (a) 9 (b) 6.5 (c) 7 (d) 13
- 122 The type of the angle that supplements an obtuse angle is
 (a) Right angles (b) Acute angle (c) Zero angle (d) other
- 123 $-7 \times 99 = \dots$
 (a) 693 (b) 735 (c) -693 (d) -735
- 124 If $A = \{5, 7\}$, the number of subsets of the set A is
 (a) 2 (b) 4 (c) 6 (d) 8
- 125 If the length of a road on a map drawn to a scale as $1 : 900,000$ is 11 cm, the real length of the road in kilometres is
 (a) 9 (b) 5 (c) 90 (d) 99



- 126 The mode of the number : 5,4,6,8,4,5,4,8 is
- a 6 b 4 c 5 d 8
- 127 The measure of the central angle of the circular sector which represent 30 % of the area of the circle is
- a 180° b 108° c 118° d 72°
- 128 If 15 % of x equals 20 % of y , the ratio of x : y is
- a 5:4 b 3:2 c 4:3 d 3:4
- 129 The number of axes of symmetry of a regular hexagon is
- a 2 b 4 c 6 d 8
- 130 The projection of the point [-7 , 3] on the y - axis is
- a [0 , -3] b [3 , -7] c [0 , 3] d [0 , 0]
- 131 $\frac{6}{37} \times 7 + \frac{6}{37} \times 5 + \frac{6}{37} \times (-11) = \dots\dots\dots$
- a $\frac{6}{37}$ b $\frac{12}{37}$ c 100 d -11
- 132 Subtracting $8x - 7y$ from $5x - 2y$ the result is
- a $-3x - 5y$ b $3x + 5y$ c $3x - 5y$ d $5y - 3x$
- 133 If $\frac{8}{x+4} = \frac{3}{9}$ the value of x is
- a 8 b 9 c 10 d 20
- 134 If $\angle X$ is complementary to $\angle Y$, and $M(\angle X) = 2 M(\angle Y)$, then the measure of $\angle Y$ is
- a 120° b 60° c 45° d 30°
- 135 In the opposite figure the value of X is
- a 65° b 88° c 120° d 55°
- 136 If the perimeter of triangle is 34 in the opposite figure , then the value of X is
- a 14 b 24 c 12 d 10
- 137 If $\frac{14}{x} = \frac{y}{7}$, then $xy = \dots\dots\dots$
- a 14 b 80 c 98 d 7
- 138 If 13,500 tourists represent 12 % of a tourists group , then the number of tourists in the entire group is tourists.
- a 100,250 b 110,200 c 112,500 d 13,500
- 139 Hesham packed 100 cardboard boxes in 2.5 hours. It would take Hesham Hours to pack 160 boxes , working at the same rate.
- a 2 b 4 c 8 d 9



Find the value of X



140

☐ a 85° ☐ b 45° ☐ c 130° ☐ d 180°

141

 $-2 - (-3) = \dots\dots\dots$ ☐ a -1 ☐ b 1 ☐ c -5 ☐ d 5

142

 $24\frac{1}{3}\% + \dots\dots\dots = 0.\bar{3}$ ☐ a 8% ☐ b 9% ☐ c 10% ☐ d 11%

143

The value of the expression $(4x - 10)$ at $x = -1$ equals☐ a 10 ☐ b -14 ☐ c 14 ☐ d -10

144

If Omar has x ten-pound banknotes in addition to 1 one-hundred-pound banknotes, and the total amount of Omar's money is 330 pounds, then $x = \dots\dots\dots$ ☐ a 20 ☐ b 30 ☐ c 33 ☐ d 23

145

A parallelogram with a base length of 12 cm, its corresponding height is $(3x-1)$ cm and its area is 60 squared centimeters, then $x = \dots\dots\dots$ ☐ a 2 ☐ b 4 ☐ c 6 ☐ d 8

146

 $5x - (-4x) = \dots\dots\dots$ ☐ a $-x$ ☐ b x ☐ c $-9x$ ☐ d $9x$

147

180 pounds are to be divided between two persons in the ratio 7 : 5, the larger share is

☐ a 135 pounds☐ b 105 pounds☐ c 75 pounds☐ d 60 pounds

148

If the arithmetic mean of five integers is 14, the median is 15, and the mode is 11, then the greatest of these integers is

☐ a 19 ☐ b 14 ☐ c 17 ☐ d 18

149

The simplest form of the expression $a + a + b + a + b$ is☐ a $3a + 2b$ ☐ b $3a + b + b$ ☐ c $a^3 + 2b$ ☐ d $a^3 + b^2$

150

If $A = \{1, 3, 5\}$ and $B = \{2, 3, 4\}$, then $A \cap B = \dots\dots\dots$ ☐ a $\{1\}$ ☐ b $\{2\}$ ☐ c $\{1, 2\}$ ☐ d $\{3\}$

151

The measure of each interior angle in a regular octagon is

☐ a 144° ☐ b 135° ☐ c 180° ☐ d 120°

152

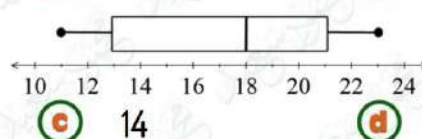
From the following table, the measure of central angle corresponding to the coffee sector is

Drink	Coffee	Tea	juices
people	150	350	100

☐ a 45° ☐ b 90° ☐ c 120° ☐ d 150°

153

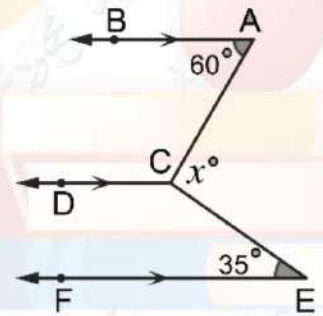
From the adjacent box plot, the range is

☐ a 10 ☐ b 12 ☐ c 14 ☐ d 16 

Question 02

Answer the following questions

- 1 If $a = 3$, $b = -3$ and $c = 2$, find the result of each of the following :
- $2a + b + c$
 - $3b + 5c$
 - $ab - 5c$
- 1) $(2 \times 3) + (-3) + 2 = 5$
 2) $(-3 \times 3) + (5 \times 2) = 1$
 3) $(3 \times -3) - (5 \times 2) = -19$
- 2 A picture of a butterfly with a real length of 2.5 cm and a length in the picture of 2 metres, find the scale of the drawing?
- Scale of drawing = $\frac{\text{The length in the drawing}}{\text{The real length}} = \frac{2 \text{ m}}{2.5 \text{ cm}} = \frac{200 \text{ cm}}{2.5 \text{ cm}} = \frac{80}{1} = 80 : 1$
- 3 A factory produces 1500 lamps in 3 hours, calculate the production rate of the factory in two hours?
- $\frac{1500}{3} = \frac{x}{2}$, $x = \frac{1500 \times 2}{3}$, $x = 1,000$ lamps
- 4 A school with $(8X + 15)$ girls and $(7X - 10)$ boys, write a mathematical expression that shows how many more girls there are than boys in this school.
- $(8X + 15) - (7X - 10) =$
 $(8X + 15) + (-7X + 10) =$
 $(8X + (-7X)) + (15 + 10) =$
 $= X + 25$
- 5 With proof find the value of X in the opposite figure :
- $\therefore AB \parallel CD$, AC is a transversal.
 $m \angle ACD + m \angle A = 180^\circ$
 (two interior angles and on one side of the transversal)
 $\therefore m \angle ACD = 180^\circ - 60^\circ = 120^\circ$
 $CD \parallel EF$, CE is a transversal
 $\therefore m \angle DCE + m \angle E = 180^\circ$
 (two interior angles and on one side of the transversal)
 $\therefore m \angle DCE = 180^\circ - 35^\circ = 145^\circ$
 *The sum of the measures of the accumulative angles at a point C = 360°
 $\therefore m \angle ACE = 360^\circ - (120^\circ + 145^\circ) = 95^\circ$
 $\therefore x = 95^\circ$
- 6 Ahmed bought 10 apples for 70 pounds, how many apples of the same type can he buy for 98 pounds?
- $\frac{10}{70} = \frac{x}{98}$, $x = \frac{10 \times 98}{70}$, $x = 14$ apples



- 7 If the number of students in a school is 650 and the ratio between the number of boys to the number of girls is 6 : 7, calculate the increase in the number of girls compared to the number of boys?

Boys : girls : sum
6 : 5 : 13
X : Y : 650

$$\text{Boys} = \frac{6 \times 650}{13} = 300$$

$$\text{Girls} = \frac{5 \times 650}{13} = 250$$

The increase in the number of girls = $300 - 250 = 50$ girls

- 9 Find the measures of the numbered angles in the opposite figure :

$$m\angle 3 = 60^\circ \quad \therefore m\angle 2 = 120^\circ \quad \therefore m\angle 5 = 60^\circ \quad \therefore m\angle 4 = 120^\circ$$

- 10 In the opposite figure , prove that $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$:

$$m\angle CRM = m\angle BMR = 120^\circ \therefore$$

[alternating interior angles]

$$\therefore \overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$$

- 11 A football field is rectangular shape, and its length is 15 meters less than twice its width. If its perimeter is 330 meters , find the dimensions of the field.

Let the width of the rectangle be x

$$\text{So, the length} = 2x - 15$$

$$\therefore \text{the perimeter} = 330 \text{ m}$$

$$\therefore 2x + 2(2x - 15) = 330$$

$$2x + 4x - 30 = 330$$

$$6x - 30 = 330$$

$$\therefore x = 60$$

$$\therefore \text{the width} = 60 \text{ m , the length} = 2 \times 60 - 15 = 105 \text{ m}$$

- 12 If the price of a mobile phone in store is 12,750 LE and its price was reduced by 8 % , what will be the price after the discount ?

The percentage of the price of the mobile phone after discount =

$$100 \% - 8 \% = 92 \%$$

The price of the mobile phone after discount =

$$12,750 \times 92 \% = 11,730 \text{ LE}$$

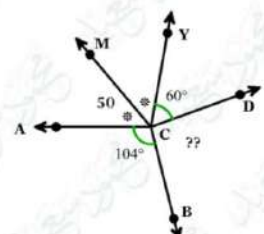
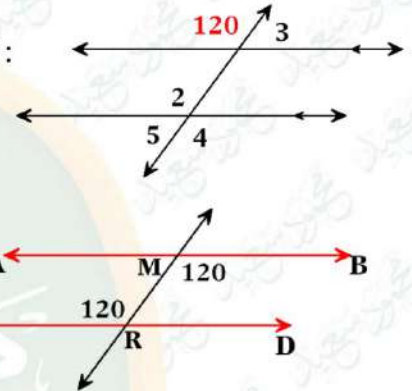
- 13 Write all the subsets of the set $B = \{ 2, 7, 9 \}$ and state their number.

$$\{ 2 \} \{ 7 \} \{ 9 \} \{ 2, 7 \} \{ 2, 9 \} \{ 7, 9 \} \{ 2, 7, 9 \} \emptyset$$

- 14 In the opposite figure, find $M (\angle BCD)$:

$$m\angle ACM = m\angle MCY = 50^\circ$$

$$m\angle BCD = 360^\circ - (50 + 50 + 60 + 104) = 96^\circ$$



- 15 Add the two algebraic expressions : $3x + 2y$ and $5y - 6x + 2$, then find the numerical value of the result when $x = 3$, $y = -1$

$$3x + 2y$$

$$-6x + 5y + 2$$

$$-3x + 7y + 2$$

$$\text{The numerical value} = -3 \times 3 + 7 \times (-1) + 2 = -14$$

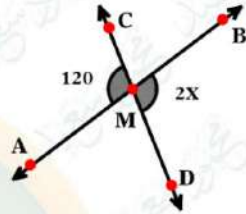
- 16 If $\overrightarrow{CD} \cap \overrightarrow{AB} = \{M\}$, Find the value of X

$$\overrightarrow{AB} \cap \overrightarrow{CD} = \{M\}$$

$$\therefore m \angle CMA = m \angle BMD \text{ (V.O.A)}$$

$$\therefore 2x = 120 \quad \therefore x = \frac{120}{2} = 60^\circ$$

Find with proof the value of X ?



- 17 $\because AB = BC = CD = AD$, $m \angle B = 90^\circ$

$\therefore ABCD$ is a square

$\therefore AC$ is a diagonal

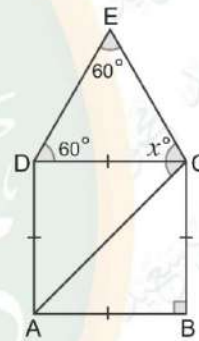
$$\therefore m \angle ACD = 45^\circ$$

In $\triangle CDE$:

$$\therefore m \angle E = m \angle D = 60^\circ$$

$$\therefore m \angle ECD = 180^\circ - (60^\circ + 60^\circ) = 60^\circ$$

$$\therefore m \angle ECA = X = 45^\circ + 60^\circ = 105^\circ$$



- 18 Find with proof the value of X ?

$\therefore \angle CBM$ is an exterior angle

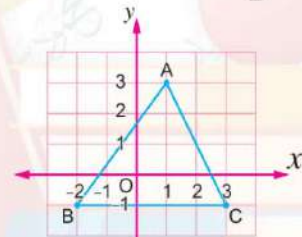
$$\therefore m \angle CMB = 56 + 104 = 160^\circ$$



- 19 In the opposite figure find the coordinates of A, C and B and find the area of triangle?

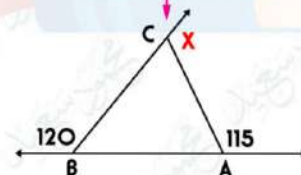
$$A(1,3) \quad B(-2,-1) \quad C(3,-1)$$

$$\text{The area} = \frac{1}{2} \times 5 \times 4 = 10 \text{ square units}$$



- 20 In the opposite figure find the value of X ?

$$X = 65 + 60 = 125^\circ$$



- 21 What is the decrease of : $7a - 2b + 5c$ than $(3b - 5a + c)$?

$$3b - 5a + c - (7a - 2b + 5c) =$$

$$3b - 5a + c - 7a + 2b - 5c =$$

$$3b + 2b - 5a - 7a + c - 5c =$$

$$5b - 12a - 4c$$



- 22 An object on Earth weighs 90 Newton, so if you know that its weight on the Moon is 15 Newton, how much does another body weigh on the Moon if its weight on Earth is 60 Newton?

$$\frac{90}{15} = \frac{60}{x} \quad x = \frac{60 \times 15}{90} = 10$$

- 23 If 100 grams of chocolate gives 300 calories, find the number of calories in 30 grams of the same type of chocolate?

$$\frac{100}{300} = \frac{30}{x} \quad x = \frac{300 \times 30}{100} = 90$$

- 24 Find the value of A and B in the sets $\{4, 3, 7, A\} = \{5, B, 3, 7\}$?

$$A = \{5\}, B = \{4\}$$

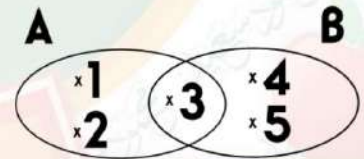
- 25 If the price of fridge last year was 6,250 LE, and its price increased this year to 7,000 LE, find the rate of increase?

$$\text{The difference} = 7000 - 6250 = 750 \text{ LE}$$

$$\text{The rate of increase} = \frac{750 \times 100}{6250} = 12 \%$$

- 26 From the given shape , determine :

- 4) A, B
5) $A \cup B$
6) $A \cap B$



- 1) $A = \{1, 2, 3\}, B = \{3, 4, 5\}$
2) $\{1, 2, 3, 4, 5\}$
3) $\{3\}$

- 27 Saif bought a car for 100,000 pounds and then sold it with a gain of 5% of the purchase price, calculate the selling price of Saif for the car after the increase ?

$$\text{The selling price} = \frac{105 \times 100,000}{100} = 105,000 \text{ pounds}$$

- 28 If $Y = \frac{4}{9}$, $X = \frac{-2}{9}$, then find $2X + Y$ in simplest form.

$$\left[2 \times \frac{-2}{9} \right] + \frac{4}{9} = \frac{-4}{9} + \frac{4}{9} = 0$$



29 If $A = 3$, $B = [-3]$, $C = 2$, then find :

3) $(A \times B) \div C$

4) $(B \div C) \times A$

1) $(3 \times -4) \div 2 = -12 \div 2 = -6$

2) $(-4 \div 2) \times 3 = -6$

30 If the ratio between the side lengths of a triangle with a perimeter of 150 cm is 3 : 5 : 7, calculate the length of its largest side?

1 st : 2 nd : 3 rd : sum

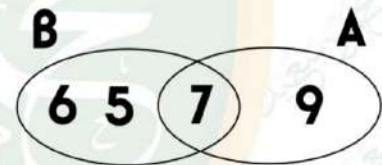
3 : 5 : 7 : 15

a : b : c : 150

the length of the largest side = $\frac{7 \times 150}{15} = 70$

31 Represent in a Venn diagram :

$A = \{7, 9\}$, $B = \{7, 6, 5\}$



32 A person distributed an amount of money to three people, so he gives the first $(7 + x)$ pounds, and give the second $(1 + x3)$ pounds, and the third, $(2 - x2)$ pounds, write in the simplest form the algebraic amount that expresses the amount that was distributed, and if $x = 10$, what is the value of this amount ?

$(X+7) + (3X+1) + (2X-2) = 6X+6 = (6 \times 10) + 6 = 66 \text{ Pounds}$

33 A liquid whose temperature was 20 degrees below zero , after heating its temperature raised by 8 degrees Celsius, calculate the temperature of the liquid after heating?

$-20 + 8 = -12$

34 Use the properties of addition in Z to find: $17 + 32 + [-17]$

$17 + [-17] + 32$ (Commutative property)

$(17 + [-17]) + 32$ (Associative property)

$0 + 32$ (Additive inverse)

32 (Additive identity)

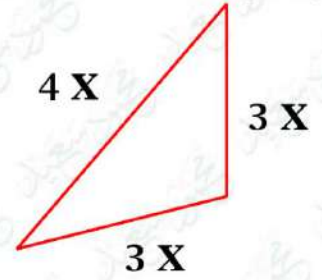


35

Find the mathematical expression representing the perimeter of the opposite triangle in the simplest form , then find its numerical value at $X = 2$

The mathematical expression = $4x + 3x + 3x$

The perimeter = $10 \times 2 = 20$



36

Four people bought tickets to enter the Egyptian Museum in Cairo, and they also bought souvenirs for 500 pounds, if the total cost is 620 pounds, write an equation that represents this situation, what is the price of one ticket?

$$4x + 500 = 620 \quad \therefore 4x = 620 - 500 \quad \therefore 4x = 120 \quad \therefore x = \frac{120}{4} \quad \therefore x = 30$$

The price of one ticket = 30 pounds

37

From the opposite figure find the value of X ?

∴ The polygon is a hexagon.

$$\therefore (5X + 9)^\circ + (7X - 19)^\circ + (7X - 23)^\circ$$

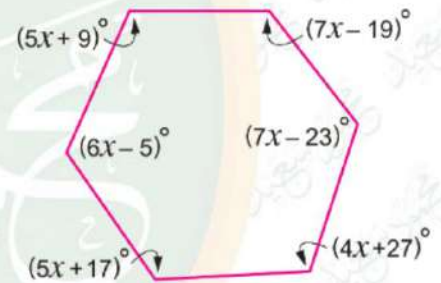
$$+ (4X + 27)^\circ + (5X + 17)^\circ$$

$$+ (6X - 5)^\circ = 720^\circ$$

$$\therefore 34x + 6^\circ = 720^\circ$$

$$\therefore 34X = 720^\circ - 6^\circ = 714^\circ$$

$$\therefore x = 714^\circ \div 34 = 21^\circ$$



38

The opposite bar graph shows the distribution of students in summer activities according to their preferences. Fill in the table below And then represent this data using a pie chart :

Activity	Basketball	Foot ball	handball
percentages	$\frac{70}{200} \times 100\% = 35\%$	$\frac{80}{200} \times 100\% = 40\%$	$\frac{50}{200} \times 100\% = 25\%$

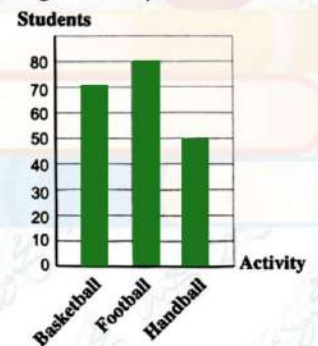
The number of total students = $70 + 80 + 50 = 200$

The measure of the central angle of each sector

$$\text{Basketball} = \frac{35}{100} \times 360^\circ = 126^\circ$$

$$\text{Football} = \frac{40}{100} \times 360^\circ = 144^\circ$$

$$\text{Handball} = \frac{25}{100} \times 360^\circ = 90^\circ$$



39

The opposite table represents the number of votes each of Khaled , Anas and Hamza gained in the classroom election. Use a pie chart to represent this data :

Number of votes = $8 + 12 + 10 = 30$ votes

Student name	khaled	Anas	Hamza
Number of votes	8	12	10

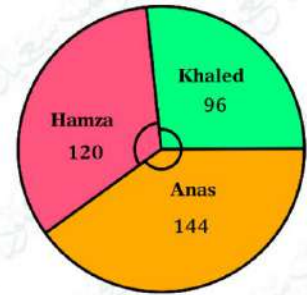


The measure of the central angle of Khaled = $\frac{8}{30} \times 360^\circ = 96^\circ$

The measure of the central angle of Anas =

$$\frac{12}{30} \times 360^\circ = 144^\circ$$

The measure of the central angle of Hamza = $\frac{10}{30} \times 360^\circ = 120^\circ$



40

From the opposite figure find $m(\angle ABC)$?

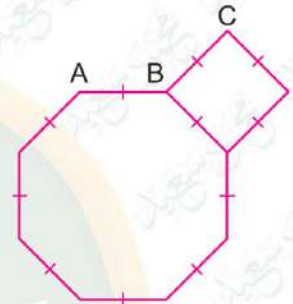
• The measure of interior angle of square = 90°

The measure of interior angle of regular octagon

$$\frac{180 \times 6}{8} = 135^\circ$$

$$\therefore m(\angle ABC) = 360^\circ - (90^\circ + 135^\circ) = 135^\circ$$

(The accumulative angles at a point B)



41

Find the $m(\angle H)$?

• ABCDEF is a hexagon.

The measure of any interior angle = $\frac{180 \times 4}{6} = 120^\circ$

$$\therefore m(\angle ABC) = 120^\circ$$

$$\therefore m(\angle ABC) + m(\angle CBG) = 180^\circ$$

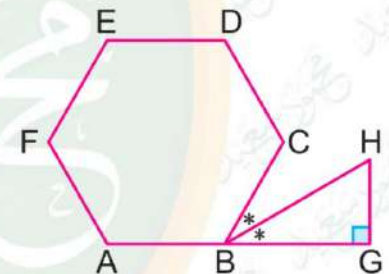
(two supplementary adjacent angles)

$$\therefore m(\angle CBG) = 180^\circ - 120^\circ = 60^\circ$$

$$\therefore m(\angle CBH) = m(\angle HBG)$$

$$\therefore m(\angle HBG) = 60^\circ \div 2 = 30^\circ$$

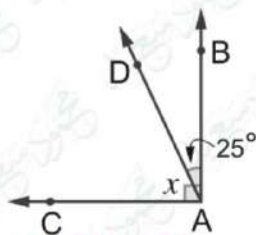
$$\text{In } \triangle BGH : \therefore m(\angle H) = 180^\circ - (90^\circ + 30^\circ) = 60^\circ$$



Question 03

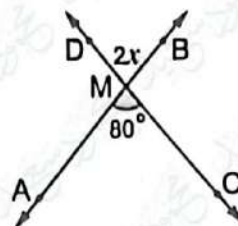
Find the value of x

1



$$x = 90 - 25 = 65^\circ$$

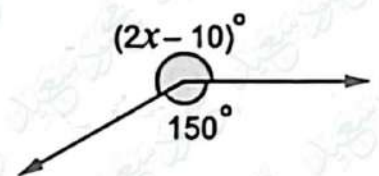
2



$$2x = 80$$

$$x = \frac{80}{2} = 40^\circ$$

3



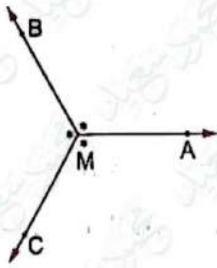
$$2x - 10 = 210,$$

$$2x = 220$$

$$x = \frac{220}{2} = 110^\circ$$

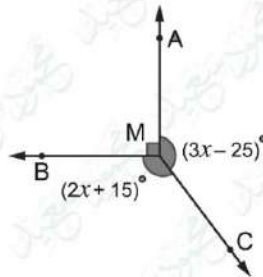


4



$$M = \frac{360}{3} = 120^\circ$$

5



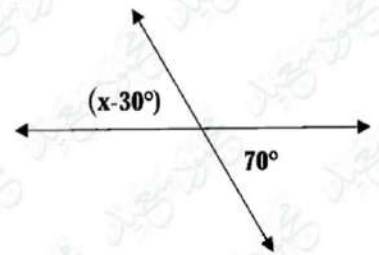
$$2x+15 + 3x - 25 + 90 = 360$$

$$5x - 80 = 360,$$

$$5x = 280$$

$$X = \frac{280}{5} = 56^\circ$$

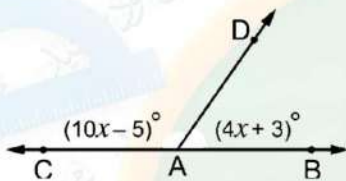
6



$$x-30 = 70,$$

$$x = 100^\circ$$

7

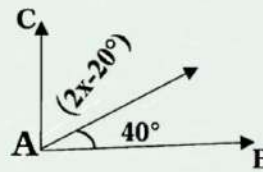


$$10x - 5 + 4x + 3 = 180^\circ$$

$$14x - 2 = 180^\circ, 14x = 182$$

$$X = \frac{182}{14} = 13^\circ$$

8

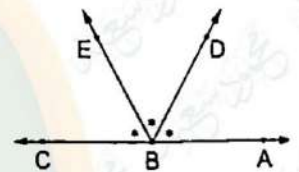


$$2x-20 = 90-40,$$

$$2x = 70$$

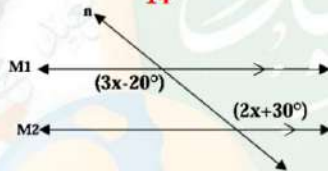
$$X = \frac{70}{2} = 35^\circ$$

9



$$X = \frac{180}{3} = 60^\circ$$

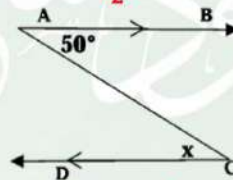
10



$$3x - 20 = 2x + 30$$

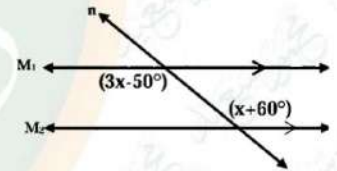
$$X = 50^\circ$$

11



$$X = 50^\circ$$

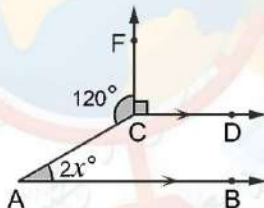
12



$$3x - 50 = x + 60, 2x = 110$$

$$X = \frac{110}{2} = 55^\circ$$

13

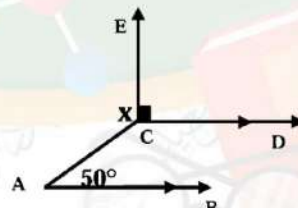


$$m\angle C = 360 - (90 + 120) = 150^\circ$$

$$2x = 180 - 50 = 30$$

$$X = \frac{30}{2} = 15^\circ$$

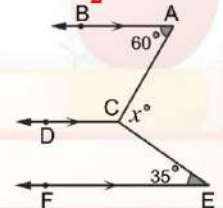
14



$$m\angle C = 180 - 50 = 130^\circ$$

$$m\angle x = 360 - (130 + 90) = 140^\circ$$

15

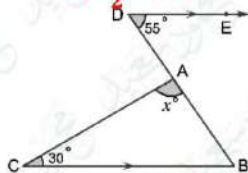


$$m\angle ACD = 180 - 60 = 120^\circ$$

$$m\angle DCE = 180 - 35 = 145^\circ$$

$$m\angle x = 360 - (145 + 120) = 95^\circ$$

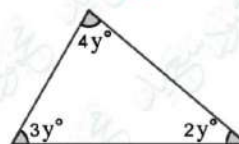
16



$$m\angle D = m\angle b = 55^\circ$$

$$m\angle x = 180 - (30 + 55) = 95^\circ$$

17

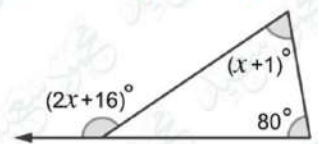


$$3y + 2y + 4y = 180^\circ,$$

$$9y = 180^\circ$$

$$Y = \frac{180}{9} = 20^\circ$$

18

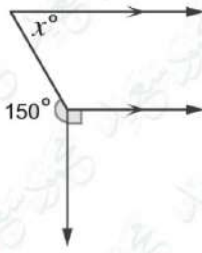


$$2x + 16 = x + 1 + 80$$

$$X = 81 - 16, x = 65^\circ$$



19

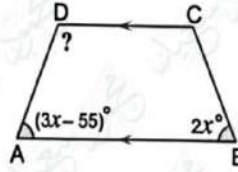


$$360^\circ - (150^\circ + 90^\circ) = 120^\circ$$

$$180^\circ - 120^\circ = 60^\circ$$

20

If $M(\angle A) = M(\angle B)$



$$3x - 55^\circ = 2x, 3x - 2x = 55^\circ,$$

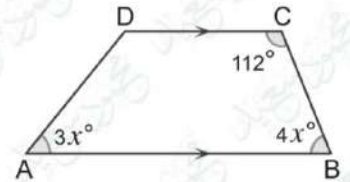
$$x = 55^\circ$$

$$M(\angle A) = 3 \times 55^\circ - 55^\circ$$

$$= 165 - 55 = 110$$

$$M(\angle D) = 180^\circ - 110^\circ = 70^\circ$$

21



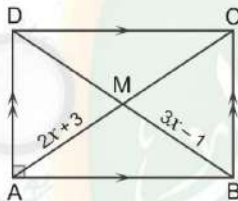
$$4x + 112^\circ = 180^\circ$$

$$4x = 68^\circ, x = 17^\circ, M(D) =$$

$$360 - (51 + 68 + 112) = 129^\circ$$

22

In the opposite rectangle find the value of X



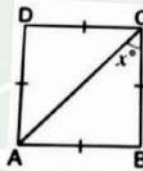
$$3x - 1 = 2x + 3$$

$$3x - 2x = 3 + 1$$

$$x = 4^\circ$$

23

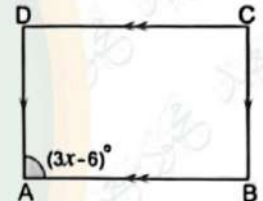
In the opposite square find the value of X



$$x = 45^\circ$$

24

In the opposite rectangle find the value of X



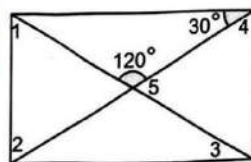
$$3x - 6 = 90^\circ$$

$$3x = 90 + 6$$

$$x = 32$$

25

Find the measure of the numbered angles :



Rectangle

$$M(\angle 1) = 60^\circ$$

$$M(\angle 2) = 60^\circ$$

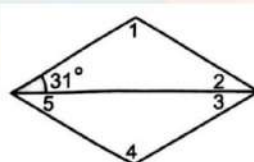
$$M(\angle 3) = 30^\circ$$

$$M(\angle 4) = 60^\circ$$

$$M(\angle 5) = 60^\circ$$

26

Find the measure of the numbered angles :



$$M(\angle 1) = 118^\circ$$

$$M(\angle 2) = 31^\circ$$

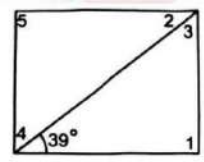
$$M(\angle 3) = 31^\circ$$

$$M(\angle 4) = 118^\circ$$

$$M(\angle 5) = 31^\circ$$

27

Find the measure of the numbered angles :



Rectangle

$$M(\angle 1) = 90^\circ$$

$$M(\angle 2) = 39^\circ$$

$$M(\angle 3) = 51^\circ$$

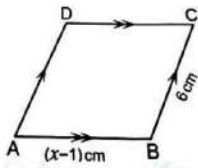
$$M(\angle 4) = 51^\circ$$

$$M(\angle 5) = 90^\circ$$



28

In a Rhombus :



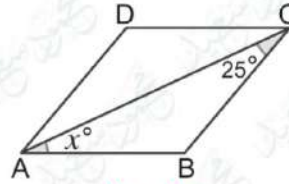
$$X - 1 = 6$$

$$X = 6 + 1$$

$$X = 7$$

29

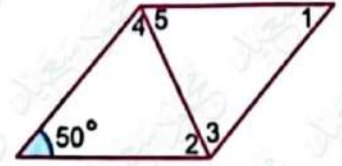
In a Rhombus :



$$X = 25^\circ$$

30

In a Rhombus :



$$M(\angle 1) = 50^\circ$$

$$M(\angle 2) = 65^\circ$$

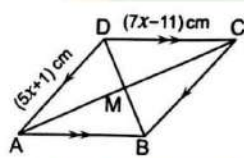
$$M(\angle 3) = 65^\circ$$

$$M(\angle 4) = 65^\circ$$

$$M(\angle 5) = 65^\circ$$

31

In a Rhombus :



$$7x - 11 = 5x + 1$$

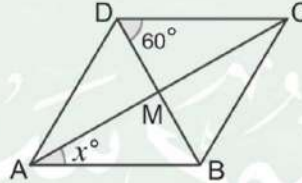
$$7x - 5x = 1 + 11$$

$$2x = 12$$

$$X = 6$$

32

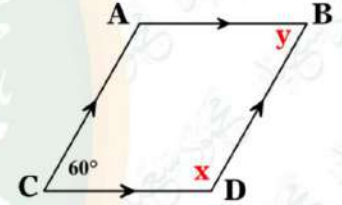
In a Rhombus :



$$X = 90 - 60 = 30^\circ$$

33

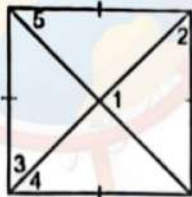
Find the value of X and Y



$$Y = 60^\circ$$

$$x = 180 - 60 = 120^\circ$$

34



$$M(\angle 1) = 90^\circ$$

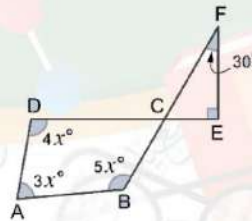
$$M(\angle 2) = 45^\circ$$

$$M(\angle 3) = 45^\circ$$

$$M(\angle 4) = 45^\circ$$

$$M(\angle 5) = 45^\circ$$

35



$$180^\circ - (90^\circ + 30^\circ) = 60^\circ$$

$$4x^\circ + 3x^\circ + 5x^\circ + 60^\circ = 360^\circ$$

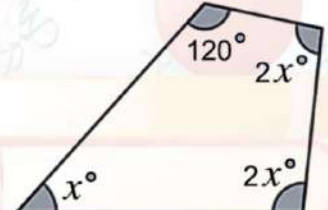
$$12x^\circ + 60^\circ = 360^\circ$$

$$12x = 360^\circ - 60^\circ$$

$$12x = 300^\circ$$

$$X = 25^\circ$$

36



$$2x^\circ + 2x^\circ + x^\circ + 120^\circ = 360^\circ$$

$$5x = 360^\circ - 120^\circ$$

$$5x = 240^\circ$$

$$X = 48^\circ$$

تم بحمد الله ،



حمل الآن

مجاناً وحصرياً

المراجعة رقم (3)

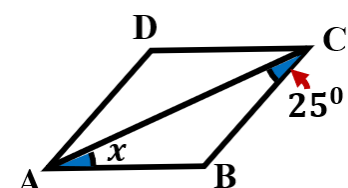
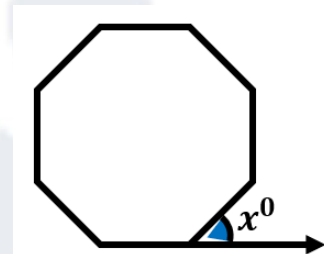
الترم الاول



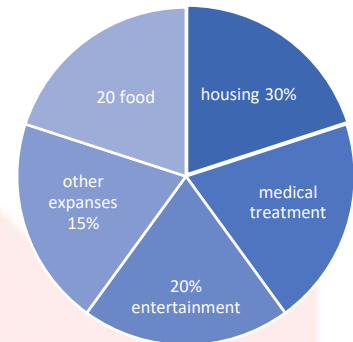
Question 1

Choose the correct answer:

- Which of the following is equal to - 5?
 - $0 \div (-5)$
 - $1 \div (-5)$
 - $-25 \div (-5)$
 - $-25 \div 5$
- If the price of an item decreased from 1,500 LE to 1,200 LE, what is the discount rate ?
 - 3%
 - 15%
 - 20%
 - 30%
- If $x < 0$ and $y > 0$, in which quadrant does the point $(x, -y)$ lie?
 - First
 - Second
 - Third
 - Fourth
- Which of the following equations has no solution in Z?
 - $6x = 12$
 - $6x = 15$
 - $6x = 18$
 - $6x = 24$
- Magdy can run 75 meters in 25 seconds. If he maintained his speed, which proportion you can use to find the time (X) he needs to run 300 meters ?
 - $\frac{75}{25} = \frac{x}{300}$
 - $\frac{75}{25} = \frac{300}{x}$
 - $\frac{25}{x} = \frac{300}{75}$
 - $\frac{75}{x} = \frac{300}{25}$
- What is the type of the angle that supplements an acute angle ?
 - Acute
 - Obtuse
 - Straight
 - Reflex
- In the opposite figure: The shape is a regular octagon. What is the value of X?
 - 35°
 - 45°
 - 75°
 - 135°
- If the sum of two angles in a triangle is 130 deg , what is the measure of the third angle?
 - 20°
 - 30°
 - 50°
 - 60°
- Which inequality expresses that Bassem requires a minimum of 10 gigabytes per month to accomplish his work online ?
 - $x < 10$
 - $x > 10$
 - $x \leq 10$
 - $x \geq 10$
- In the opposite figure ABCD is a rhombus. What is the value of X?
 - 25°
 - 50°
 - 100°
 - 130°



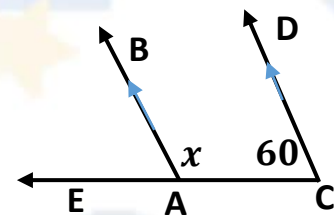
11. The opposite figure shows a pie chart for the expenditure of a family whose monthly income is 10,000 LE. The monthly medical treatment expenses are.....LE



- (a) 1,500 (b) 2,000 (c) 2,500 (d) 3,000
12. The result of adding the two expressions: $-3y - x - 4z$, $x + 3y - 4z$ is
- (a) zero (b) $-8z$ (c) $8z$ (d) $2x - 6y + 8z$

13. If $\{4,5,7\} \subset \{3,x,4,y,8\}$, then what is the value of $x + y$?

- (a) 5 (b) 7 (c) 8 (d) 12
14. In the opposite figure: What is the value of X?



- (a) 150° (b) 120° (c) 110° (d) 60°
15. Which of the following operations has the same result $2\frac{2}{3} \div (-1\frac{3}{7})$
- (a) $2\frac{2}{3} \times (-1\frac{7}{3})$ (b) $2\frac{2}{3} + 1\frac{3}{7}$
- (c) $-2\frac{2}{3} \times \frac{7}{10}$ (d) $-1\frac{3}{7} + 2\frac{2}{3}$

16. An isosceles triangle has two sides with lengths of 4 cm and 8 cm. What is the length of the third side?

- (a) 4cm (b) 5cm (c) 6cm (d) 8cm
17. If $\frac{1}{3} = \frac{2}{b+1}$, then what is the value of b?
- (a) 2 (b) 3 (c) 4 (d) 5

18. What is the mathematical expression that represents subtracting (-2) from X?

- (a) $x - 2$ (b) $2 - x$ (c) $-2 - x$ (d) $x + 2$
19. If angles A and B are complementary and $m(\angle A) = 40^\circ$ what is the measure of $\angle B$?
- (a) 40° (b) 50° (c) 90° (d) 140°

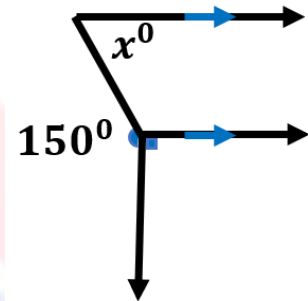
20. If the point (4,3) is the midpoint of overline $\overline{AB}$, where B (2, y) and A (X, 5), what is the value of (x + y)

- (a) 3 (b) 5 (c) 7 (d) 9

21. In the opposite

figure: $x = \dots\dots\dots$

- (a) 60°
(b) 90°
(c) 120°
(d) 50°



22. Which of the following represent the solution set: $2(X-5) = 0$ in $\mathbb{Q}$?

- (a) 0 (b) 5 (c) -5 (d) 10

23. If the actual length is 90 meters and the scale is 1: 10,000, what is the length in the drawing in centimeters ?

- (a) 0.09cm (b) 90cm (c) 9cm (d) 0.9cm

24. Which of the following sets of quadrilaterals have all their sides are equal in length ?

- (a) {Square, Rectangle} (b) {Trapezoid, Rhombus}
(c) {Square, Rhombus} (d) {Rectangle, Rhombus}

25. If $A = \{8, 9, 6\}$, $B = \{2, 6, 7\}$ What is the set that represents $A \cap B$?

- (a) {6} (b) {2, 7}
(c) {8, 9} (d) {2, 6, 7, 8, 9}

26. The additive inverse of the expression: $3x - 2y + 8$ is

- (a) $-3x - 2y + 8$ (b) $-3x + 2y + 8$
(c) $-3x + 2y - 8$ (d) $3x + 2y - 8$

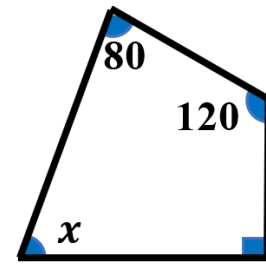
27. When representing the following table with a pie chart, what is the measure of the central angle for the coffee sector?

- (a) 45°
(b) 90°
(c) 120°
(d) 150°

Drink	Juice sector	Tea	Juice
People	100	350	150

In the opposite figure: What is the value of X?

- (a) 70^0
- (b) 80^0
- (c) 90^0
- (d) 120^0



28. The value of the expression: $(5x - 8)$ when $x = -1$ is

- (a) -13
- (b) -3
- (c) 3
- (d) 13

29. If $X : 36 = 25:20$, then what is the value of X?

- (a) 14
- (b) 28.8
- (c) 45
- (d) 60

30. If $x \notin \{2, 5, 7\}$, so which of the following could it be equal to X ?

- (a) 1
- (b) 2
- (c) 5
- (d) 7

31. What is the type of the angle that complements a right angle ?

- (a) Acute
- (b) Obtuse
- (c) Straight
- (d) Zero

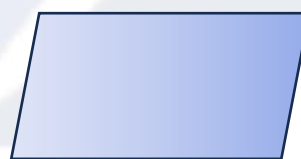
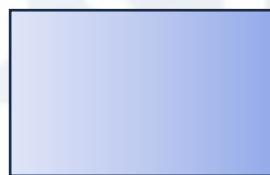
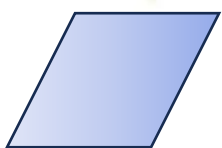
32. What is the multiplicative inverse of $-3\frac{1}{2}$?

- (a) $-\frac{7}{2}$
- (b) $-2\frac{1}{3}$
- (c) $-\frac{2}{7}$
- (d) $\frac{2}{7}$

33. Which of the following scales is equivalent to "every 1 cm in the drawing represents 6.5 km in reality ?

- (a) $1: 6, 500, 000$
- (b) $1: 6.5$
- (c) $1: 650, 000$
- (d) $1: 6, 500$

34. Which of the following shapes doesn't have an axis of symmetry?



- (a)
- (b)
- (c)
- (d)

35. The solution set for: $13+5X=3$ in N is

- (a) $\{-2\}$
- (b) $\{-1\}$
- (c) $\{2\}$
- (d) $\emptyset$

36. What is the point that represents the projection of the point $(-3, 5)$ on the X-axis?

- (a) $(0, 5)$
- (b) $(-3, 0)$
- (c) $(3, -5)$
- (d) $(-3, 5)$

37. Which of the following numbers cannot be the lengths of the sides of a triangle ?

- (a) 4 cm, 7cm, 4 cm (b) 3 cm, 4cm, 7cm
(c) 7 cm, 7cm, 7cm (d) 9 cm, 7cm, 5cm

38. $a + a + a + a = \dots\dots\dots$

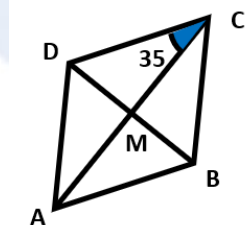
- (a) $4a^4$ (b) a^4 (c) $4 + a$ (d) $4a$

39. If the arithmetic mean of a student's grades in five exams is 94, and their grades in the first four exams are 91, 94, 92, and 97, what is their grade in the fifth exam?

- (a) 90 (b) 93 (c) 96 (d) 98

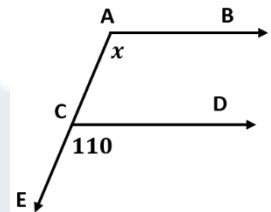
40. In the opposite figure : What is the measure of $\angle CBD$?

- (a) 35°
(b) 45°
(c) 55°
(d) 65°



41. In the opposite figure: What is the value of X?

- (a) 70°
(b) 90°
(c) 110°
(d) 130°



42. If $\frac{9}{k+1} = \frac{3}{5}$, what is the value of k?

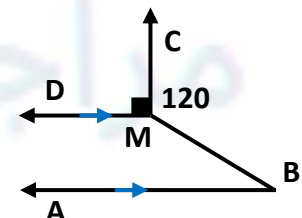
- (a) 13 (b) 14 (c) 15 (d) 16

43. What is the solution set of the equation: $4(2X + 7) = 12$ in $\mathbb{N}$?

- (a) $\{2\}$ (b) $\{-2\}$ (c) $\{-4\}$ (d) $\emptyset$

44. In the figure below: $\overrightarrow{MC} \perp \overrightarrow{MD}$, $\overrightarrow{BA} \parallel \overrightarrow{MD}$ and $m(\angle BMC) = 120^\circ$ What is the measure of $\angle B$

- (a) 20°
(b) 30°
(c) 50°
(d) 70°



45. If a map scale is 1: 200,000 and the distance between two points on the map is 3.5 cm, what is the real distance between these two points in kilometers ?

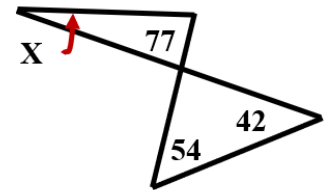
- (a) 3.5 (b) 7 (c) 8.5 (d) 700

46. $-3 - (-2) = \dots\dots\dots$

- (a) -5 (b) -1 (c) 1 (d) 5

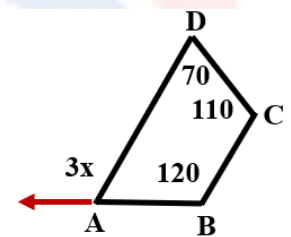
47. In the opposite figure: What is the value of X?

- (a) 19°
(b) 32°
(c) 48°
(d) 60°



48. In the opposite figure: ABCD is a quadrilateral, what is the value of X?

- (a) 40°
(b) 50°
(c) 60°
(d) 70°

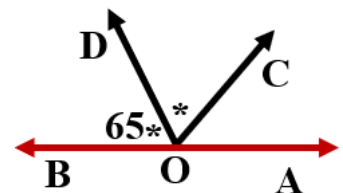


49. Which of the equations below is not equivalent to $4x + 5 = 9$?

- (a) $3x = 3$ (b) $4x + 1 = 5$ (c) $x - 1 = 5$ (d) $x + 1 = 2$

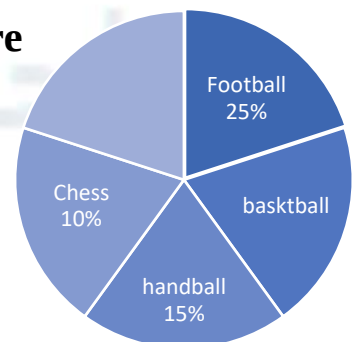
50. In the opposite figure : What is the measure of angle $\angle DOA$

- (a) 50°
(b) 80°
(c) 115°
(d) 130°



51. The opposite pie chart illustrates the distribution of students' preferences for summer activities. If there are 200 students participating in all activities, how many students chose basketball

- (a) 30
(b) 50
(c) 60
(d) 70



52. How many axes of symmetry are there in a regular hexagon ?

- (a) 2 (b) 3 (c) 4 (d) 6

53. Which of the following is equal to $8y$?

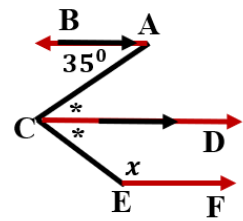
- (a) $5 + 3y$ (b) $3 + 5y$ (c) $8 + y$ (d) $3y + 5y$

54. If the price of a product is reduced from 2,000 LE to 1,700 LE, what is the discount rate?

- (a) 10% (b) 15% (c) 25% (d) 27%

55. In the opposite figure : What is the value of X?

- (a) 35°
(b) 85°
(c) 135°
(d) 145°



56. Which of the following is equivalent to the subtraction operation: $-5 - (-8)$?

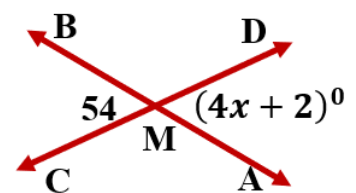
- (a) $5 - 8$ (b) $8 - 5$ (c) $8 + 5$ (d) $-5 - 8$

57. The multiplicative inverse of $(0.\overline{4} + 1\frac{2}{3})$ is.

- (a) $2\frac{1}{9}$ (b) $\frac{9}{19}$ (c) $2.\overline{1}$ (d) $\frac{19}{9}$

58. In the opposite figure : if $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$ what is the value of X?

- (a) 12°
(b) 13°
(c) 14°
(d) 15°

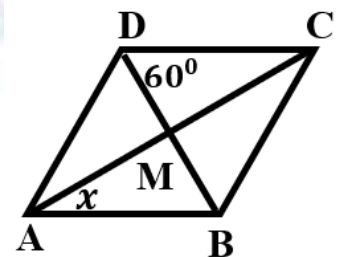


59. The arithmetic mean of the following values: 8, $2x + 1$, $x - 1$, $x + 2$ equals 7.5 What is the value of X?

- (a) 4 (b) 5 (c) 6 (d) 7

In the opposite figure: If ABCD is a rhombus, what is the value of X?

- (a) 20°
(b) 30°
(c) 50°
(d) 60°



60. How many axes of symmetry does a parallelogram have?

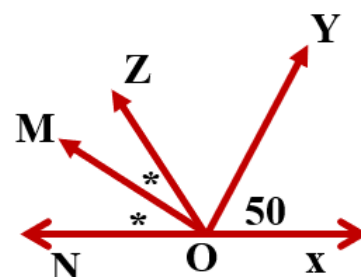
- (a) 0 (b) 1 (c) 2 (d) 4

61. In the opposite figure:

if $O \in \overleftrightarrow{XN}$

, then $m(\angle MOX) = \dots\dots\dots$

- (a) 20°
(b) 70°
(c) 140°
(d) 160°



62. The length of a fabric roll is $7\frac{1}{2}$ meters. If the fabric roll is to be divided into smaller pieces, each of length 30 centimeters, how many pieces will you get?

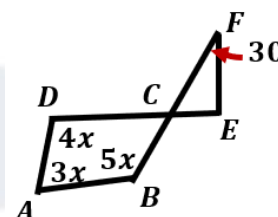
- (a) 20 (b) 22 (c) 25 (d) 28

63. What is the solutions set of the equation $3(X + 1) = X + 7$ in $\mathbb{N}$?

- (a) {1} (b) {2} (c) {3} (d) $\emptyset$

64. In the opposite figure: What is the value of X?

- (a) 20°
(b) 25°
(c) 30°
(d) 40°



65. If $X = \{2, 3, 5, 9\}$, which of the following sets is a subset of X?

- (a) {2, 3, 4} (b) {1, 5, 9} (c) {8, 9} (d) {2, 3}

66. The opposite stem-and-leaf plot shows the average battery lives of 25 smartphones. What is the percentage of smartphones have an average battery life is less than 12 hours?

- (a) 15%
(b) 20%
(c) 25%
(d) 30%

Stems	Leaves									
0	8	9								
1	0	1	1	2	2	3	4	5	6	7
2	0	2	5	6	7	8	9	9		
3	1	2								
Key	3 2 means 32 hours									

67. If ABC is a scalene triangle in which the length of $\overline{AC}$ is 3 cm and the length of $\overline{BC}$ is 5 cm, how many integers could be the length of $\overline{AB}$?

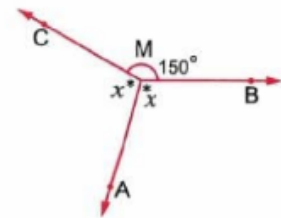
- (a) 2 (b) 3 (c) 4 (d) 5

68. What is the type of the angle supplements an acute angle ?

- (a) Acute (b) Obtuse (c) Straight (d) Reflex

69. In the opposite figure: What is the value of X?

- (a) 210^0
(b) 180^0
(c) 135^0
(d) 105^0

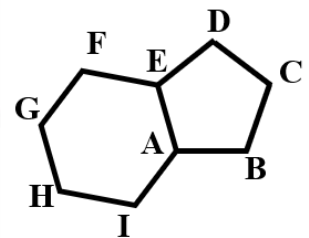


70. If ABCD is a parallelogram in which $AB = BC = CD = DA$, then the shape ABCD is

- (a) Square (b) Rectangle (c) Rhombus (d) Trapezoid

71. The opposite figure consists of a regular pentagon and a regular hexagon., then $m(\angle IAB) =$

- (a) 108^0
(b) 124^0
(c) 132^0
(d) 228^0



72. What is the projection of the point A(- 5, 3) on the X-axis ?

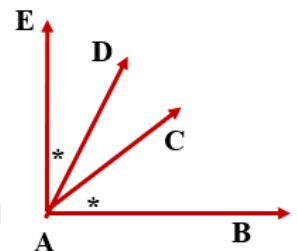
- (a) (-5, 0) (b) (0, 3) (c) (0, -5) (d) (3, 0)

73. How many diagonals does a pentagon have?

- (a) 4 (b) 5 (c) 7 (d) 10

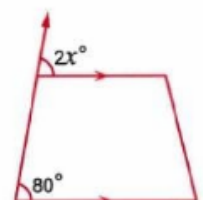
74. In the opposite figure: if $\overrightarrow{AB} \perp \overrightarrow{AE}$,, then $m(\angle BAD)$ =.....

- (a) 32.5^0
(b) 57.5^0
(c) 65^0
(d) 67^0



In the opposite figure: What is the value of X?

- (a) 40^0
(b) 60^0
(c) 80^0
(d) 100^0

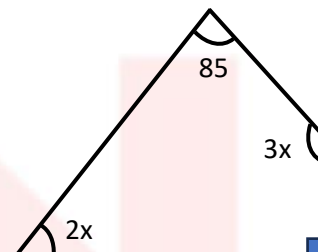


75. Which of the following sets of quadrilaterals have all their sides are equal in length ?

- (a) {Square, Rectangle} (b) {Rhombus, trapezium}
(c) {Square, Rhombus} (d) {Rectangle, Rhombus}

76. In the opposite figure: What is the value of X?

- (a) 37°
(b) 74°
(c) 85°
(d) 111°

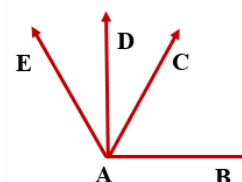


77. What is the number of axes of symmetry in a regular pentagon?

- (a) 5 (b) 6 (c) 8 (d) 10

78. The number of all adjacent angles pairs in the given figure is equal to

- (a) 2
(b) 3
(c) 4
(d) 5



79. If A (4,5) and B (-2,7), what is the midpoint of $\overline{AB}$?

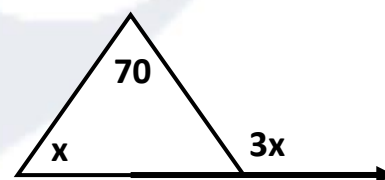
- (a) (1, 4) (b) (1, 6) (c) (3, 6) (d) (2, 12)

80. What is the measure of the interior angle of a regular hexagon?

- (a) 108° (b) 120° (c) 135° (d) 145°

81. In the following figure: What is the value of X?

- (a) 70°
(b) 140°
(c) 35°
(d) 100°

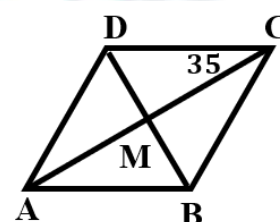


82. If A (3, 1) and B (3,-1), which of the following points is the midpoint of overline $\overline{AB}$?

- (a) (0, 3) (b) (3, 0) (c) (6, 0) (d) (0, 6)

83. In the opposite figure: What is the measure of $\angle CBD$?

- (a) 35°
(b) 45°
(c) 55°
(d) 65°



84. The lengths of two sides in an isosceles triangle are 4 cm and 8 cm. What is the length of the third side?

- (a) 4cm (b) 5cm (c) 6cm (d) 8cm

85. If the original price of a mobile phone is 15,500 LE, and the discount is 7%, what is the price after discount?

- (a) 1,085L.E (b) 10,850L.E (c) 14,415L.E (d) 14,600L.E

86. What is the median of the numbers: 3,5,12,17,14,18?

- (a) 12 (b) 13 (c) 14 (d) 15

87. If the length of the drawing is 4 cm and the real length is 12 meters, what is the scale of the drawing?

- (a) 1:3 (b) 1:30 (c) 1:300 (d) 1:3,000

88. If Magdy's average score in four tests is 16, what score must Magdy achieve in the fifth test for his overall average across all five tests to be 18?

- (a) 24 (b) 25 (c) 26 (d) 27

89. The simplified form of the expression $a + a + b + a + b$ is.....

- (a) $2a + 3b$ (b) $2b + 3a$ (c) $a^3 + b^2$ (d) $5ab$

90. In the opposite stem-and-leaf plot :

The Mode =

- (a) 4 only
(b) 5 only
(c) 4.5
(d) 34,45

Stems	Leaves					
2	1	3	6	8		
3	2	4	4	8	9	
4	1	5	5	6	7	8
5	3	4	7	9		
Key	5 3 means 53					

91. Given that for a data set 2 $(\sum x) = 1,500$, $\bar{A} = 20$, what is the value of $\sum f$

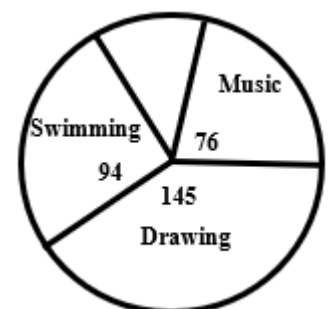
- (a) 75 (b) 150 (c) 3,000 (d) 30,000

92. If $A = \{1, 3, 5\}$ and $B = \{2, 3, 4\}$, then $A \cap B = \dots\dots\dots$

- (a) $\{1, 2, 3, 4, 5\}$ (b) $\{3, 5\}$
(c) $\{3\}$ (d) $\{1, 2\}$

93. In a survey that included a group of girls about their favorite hobby, as shown in the adjacent pie chart, what hobby is practiced by approximately $\frac{1}{4}$ girls

- (a) Drawing
(b) Music
(c) Swimming
(d) Reading



94. What is the additive inverse of $\frac{16}{33}$?

- (a) $0.\overline{48}$ (b) $-0.\overline{48}$ (c) $0.\overline{16}$ (d) $-0.\overline{16}$

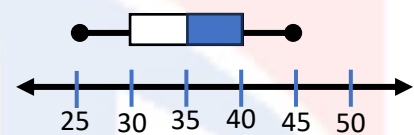
95. When representing the adjacent table with a pie chart, what is the central angle corresponding to the coffee sector?

- (a) 45^0
(b) 90^0
(c) 120^0
(d) 150^0

TYPE OF DRINK	COFFEE	TEA	JUICE
NUMBER OF PERSONS	150	350	100

96. From the adjacent box plot, the range =

- (a) 20
(b) 30
(c) 35
(d) 40



97. A dolphin dove from the water's surface to a depth of $3\frac{1}{4}$ meters , then dove an additional $2\frac{1}{2}$ meters. Which of the following does not represent the dolphin's position relative to the water's surface?

- (a) $-3\frac{1}{4} + \left(-2\frac{1}{2}\right)$ (b) $-3\frac{1}{4} + \left|-2\frac{1}{2}\right|$
(c) $-3\frac{1}{4} - 2\frac{1}{2}$ (d) $-\left(3\frac{1}{4} + 2\frac{1}{2}\right)$

98. Sara takes five tests, each with a maximum score of 100. If her scores in three of the tests are 94, 88, and 81, what is the minimum score she can achieve in one of the remaining two tests to obtain an average of 83 in all five tests?

- (a) 42 (b) 52 (c) 62 (d) 76

99. If the arithmetic mean of the lengths of the sides of a triangle is 8 cm, what is the perimeter of the triangle ?

- (a) 8 (b) 15 (c) 18 (d) 24

100. If the mode of the following: $a + 2, +1, +3, + 2$ equals 12, what is the value of a?

- (a) 2 (b) 6 (c) 10 (d) 12

101. In the opposite figure:

What is the median =

- (a) 3.7
- (b) 7
- (c) 7.3
- (d) 37

Stems	Leaves
2	0 2 3
3	4 6 6 8
4	5 7 8
5	2 9
Key	4 5 means 4.5

102. Which of the following graphs does not represent actual data values?

- (a) Bar graph
- (b) Line graph
- (c) Histogram
- (d) Stem-and-leaf plot

103. The opposite pie chart represents the favourite sport of 2,000 students in a school How many students prefer football?

- (a) 500
- (b) 700
- (c) 800
- (d) 900

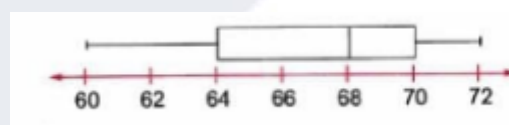


104. If the arithmetic mean of the numbers 3,4,8,X,2,X is 15, what is the value of X?

- (a) 9
- (b) 18
- (c) 29
- (d) 58

105. The opposite figure represents a box plot for 30 student masses, in kilograms. What is the first quartile ?

- (a) 60 kg
- (b) 64 kg
- (c) 68 kg
- (d) 70 kg

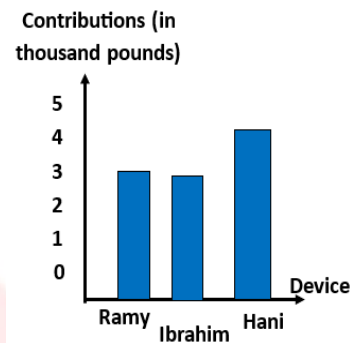


106. If the mean for the five numbers is 34, the median is 36, and the mode is 39 then the smallest possible value in this set of numbers is

- (a) 25
- (b) 22
- (c) 21
- (d) 18

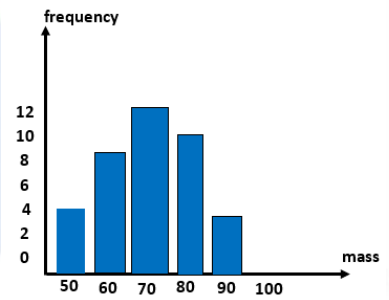
107. The opposite bar chart represents the contributions of three friends (in thousands of pounds) to a project. If their shares in the project are represented by circular sectors, what is the central angle of Hani's sector?

- (a) 72°
- (b) 108°
- (c) 144°
- (d) 162°

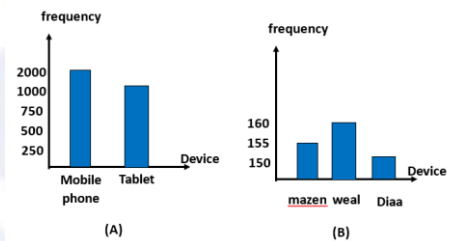


108. The opposite figure shows the histogram for the weight distribution in Kilograms of 38 students. How many of them weigh 70 kg or more?

- (a) 12
- (b) 19
- (c) 22
- (d) 26



109. The two bar charts below, one of them represents the heights of three friends, and the other represents the number of mobile phones or tablets owned by employees in a company. Which of the two charts is considered misleading?



- (a) Only chart A is misleading
- (b) Only chart B is misleading
- (c) Both charts are misleading.
- (d) Neither chart is misleading.

110. Youssef scored 48, 47, 46, 48, and 45 in five math tests. If the teacher removed the lowest score, which of the following is correct?

- (a) The mode increase
- (b) Median decrease.
- (c) The mean increase
- (d) The median doesn't change.

111. If for set of data there is $\sum f = 12$ and $\sum (f \times x) = 156$, what is value of $\bar{X}$?

- (a) 13
- (b) 144
- (c) 168
- (d) 1,872

112. If the arithmetic mean of the numbers: $X + 2, X - 5, 2X + 4, 8, X + 1, 7$, what is the value of X ?

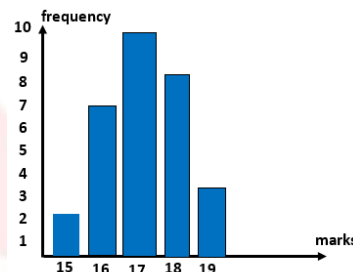
- (a) 3
- (b) 4
- (c) 5
- (d) 6

113. If the arithmetic mean of a student's marks in five exams is 94, and his marks in the first four exams are 97, 92, 94, and 91, how many marks did he score in the fifth exam?

- (a) 90 (b) 93 (c) 96 (d) 98

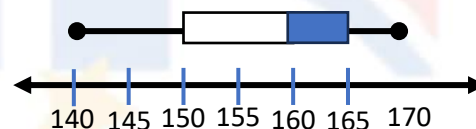
114. The figure below shows the marks of 30 students , what is the arithmetic mean of these marks?

- (a) 17
(b) 17.1
(c) 17.6
(d) 18



115. The figure below represents the box plot of the heights of 50 students in centimeters What is the value of the first quartile ?

- (a) 140cm
(b) 150cm
(c) 160cm
(d) 165cm



116. If $\frac{4}{5} = \frac{2x}{7}$ what is the value of x?

- (a) 11.2 (b) 5.6 (c) 2.8 (d) 1.4

117. What is the reciprocal of the number $0.\overline{36}$?

- (a) $\frac{4}{11}$ (b) $-\frac{4}{11}$ (c) $4\frac{2}{3}$ (d) $2\frac{3}{4}$

118. Which of the following equations is equivalent to the equation: $x+12 = 5$

- (a) $3x + 2 = 5$ (b) $4x + 3 = 7$ (c) $2x + 2 = 0$ (d) $x + 2 = 7$

119. What is the simplest form for the expression: $7b + 4a - 2 - 2b - 3a + 2$?

- (a) $5b + a + 2$ (b) $5b + 7a$ (c) $5b + a$ (d) $9b + 7a + 4$

120. If $A \subset B$, then $A \cup B =$

- (a) A (b) B (c) $A \cap B$ (d) $\emptyset$

121. What is the solution set of the equation $\left(2x + \frac{1}{3}\right) = 6$ in $\mathbb{Z}$?

- (a) $\left\{\frac{4}{3}\right\}$ (b) $\{-1\}$ (c) $\{3\}$ (d) $\emptyset$

122. What is the value of when $b^2 - 2c$ when $c = -1$ and $b = 3$?

- (a) 2 (b) 7 (c) 9 (d) 11

123. If the map scale is 1:360,000 and the distance between two points on the map is 5.5 cm, what is the real distance in kilometres?

- (a) 20 (b) 19.8 (c) 18 (d) 17.8

124. Which of the following does not equal $4a$?

- (a) $4 + a$ (b) $2a + 2a$ (c) $a + a + a + a$ (d) $a + 3a$

125. Two consecutive integers whose sum 45. Which of the following equations expresses this?

- (a) $x + x + 1 = 46$ (b) $x + x - 1 = 44$
(c) $x + x + 2 = 45$ (d) $x + x + 1 = 45$

126. Omar decided to read a book with a total of $(7x + 31)$ pages. He reads $(4x + 17)$ pages over three days. How many pages does Omar have left to finish reading the entire book?

- (a) $11x + 48$ (b) $3x - 14$
(c) $11x + 14$ (d) $3x + 14$

127. 180 pounds are to be divided between two persons in the ratio 7: 5 What is the larger share?

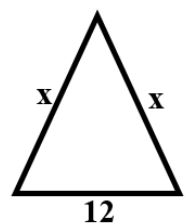
- (a) 135 pounds (b) 105 pounds (c) 75 pounds (d) 60 pounds

128. What is the mathematical formula that expresses the area (A) of a parallelogram with a base length (l) and its corresponding height (h) ?

- (a) $A = \frac{1}{2}lh$ (b) $A = l + h$ (c) $A = lh$ (d) $A = \frac{l}{h}$

129. If the perimeter of the opposite triangle is 46 cm, what is the value of X?

- (a) 23
(b) 20
(c) 17
(d) 14



130. What is the term that likes $15Xy$?

- (a) $-2x^2y$ (b) $-3yx$ (c) $4xy^2$ (d) $5x^2y^2$

131. $5x - (-4x) = \dots\dots\dots$

- (a) $-9x$ (b) $-x$ (c) x (d) $9x$

132. Which of the following equations does not equivalent to $9 = 5x - 1$?

- (a) $5x = 10$ (b) $3x = 6$
(c) $4x - 1 = 11$ (d) $x = 2$

- 133.** What is the number of terms in the algebraic expression $1+2 ab$?
- (a) 1 (b) 2 (c) 3 (d) 4
- 134.** What is the solution set of the equation $3 (X-2) = X$ in $\mathbb{Z}$?
- (a) {2} (b) {3} (c) {4} (d) {5}
- 135.** The mathematical form that describes "doubling the number X added to 5 gives 1" ?
- (a) Algebraic expression (b) Inequality
(c) Equation (d) Mathematical formula
- 136.** What is the variable that has a coefficient of 5 in the algebraic expression $- 5x + 5xy - 5y - 5$?
- (a) x (b) y (c) xy (d) 5
- 137.** A triangle has a base length of 14 cm, and its corresponding height is $(4 X + 2)$ cm. If its area is 70 square centimetres, what is the value of X?
- (a) 2cm (b) 3cm (c) 4cm (d) 5cm
- 138.** If $0.\overline{3} X + 5 = 2$, what is the value of X?
- (a) -10 (b) -9 (c) -3 (d) 3
- 139.** What is the algebraic expression equivalent to the following expression:
 $2y + 5 - 4y - 6$?
- (a) $2y + 1$ (b) $-2y - 1$ (c) $2y - 1$ (d) $-2y + 1$
- 140.** Which of the following inequalities represents the appropriate height X in centimetres for selecting someone to practice a certain sport, where the height must not be less than 165 cm?
- (a) $x < 165$ (b) $x > 165$ (c) $x \leq 165$ (d) $x \geq 165$
- 141.** If $5 = 3x - 1$, what is the value of $2 x + 3$
- (a) 2 (b) 3 (c) 5 (d) 7
- 142.** What is the solution set of the equation $0 = 10 + 2(4m - 3)$ in $\mathbb{N}$?
- (a) {1} (b) {2} (c) $\left\{-\frac{1}{2}\right\}$ (d) $\emptyset$
- 143.** If the age of Wael now is X years old and 5 years ago his age was 22 years, which of the following equations represents the current situation ?
- (a) $x + 5 = 27$ (b) $x + 5 = 22$ (c) $x - 5 = 22$ (d) $x - 5 = 17$

144. Which of the following scale drawings is equivalent to "every 1 cm in the drawing represents 6.5 km in reality"?

- (a) 1: 6,500,000 (b) 1: 6.5 (c) 1: 650,000 (d) 1: 6,500

145. If $x \notin \{2, 5, 7\}$, which of the following can be a value of X?

- (a) 1 (b) 2 (c) 5 (d) 7

146. Which of the following is equal to $\frac{3}{5} + \frac{-2}{3}$?

- (a) $\frac{1}{8}$ (b) $\frac{1}{15}$ (c) $-\frac{6}{15}$ (d) $-\frac{1}{15}$

147. A piece of land with an area of 63 feddans was divided between two persons in the ratio of 4:5. Which of the following could represent the share of either person?

- (a) 9 (b) 45 (c) 28 (d) 30

148. $\{5, 0\} \dots\dots\dots \{7, 0, 5\}$

- (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

149. What is the multiplicative inverse of $2\frac{1}{4}$?

- (a) $\frac{9}{4}$ (b) $\frac{3}{2}$ (c) $\frac{4}{9}$ (d) $\frac{2}{3}$

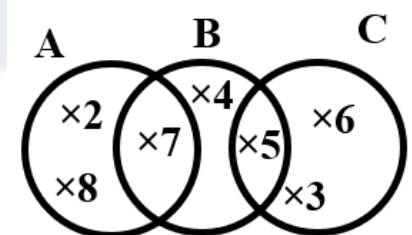
150. The length of an insect is 0.4 mm and its length after magnification is 6 cm, what is the magnification ratio ?"

- (a) 1: 15 (b) 15: 1 (c) 1: 150 (d) 150: 1

151. In the following figure:

$A \cap C = \dots\dots\dots$

- (a) {5}
(b) {3, 4, 5}
(c) {3}
(d) $\emptyset$



152. If $x = |-3|$ and $y = -4$, then $xy = \dots\dots\dots$

- (a) -12 (b) -1 (c) 1 (d) 12

153. Bassem bought a refrigerator with a 10% discount, if he saved 430 LE.

What is the price of refrigerator after discount.

- (a) 4,300 (b) 3,870 (c) 860 (d) 430

- 154.** The ratio among the length of the sides of a triangle is 3: 4: 5, if its perimeter is 72 cm What is the length of its greatest side ?
 (a) **30cm** (b) **24cm** (c) **18cm** (d) **15cm**
- 155.** $-2 - (-3) = \dots\dots\dots$
 (a) **-5** (b) **-1** (c) **1** (d) **5**
- 156.** What is the number of subsets of the set {5,7}?
 (a) **1** (b) **2** (c) **4** (d) **6**
- 157.** $24\frac{1}{3}\% + \dots\dots\dots = 0.\bar{3}$
 (a) **8%** (b) **9%** (c) **10%** (d) **11%**
- 158.** Which of the following pairs of ratios does not represent a proportion?
 (a) $\frac{2}{5}, \frac{4}{10}$ (b) $\frac{7}{14}, \frac{2}{4}$ (c) $\frac{5}{3}, \frac{25}{9}$ (d) $\frac{7}{3}, \frac{35}{15}$
- 159.** If the distance between two cities on a map is drawn at a scale of 1: 1,000,000 and the map distance is 12 cm, what is the real distance in kilometers
 (a) **60** (b) **120** (c) **150** (d) **180**
- 160.** If $\frac{x+5}{12} = \frac{5}{4}$ what is the value of $x - 2$?
 (a) **8** (b) **9** (c) **10** (d) **12**
- 161.** What is the result of subtracting $\frac{1}{8}$ from $\frac{9}{8}$?
 (a) **-1** (b) **1** (c) $\frac{5}{4}$ (d) $-\frac{5}{4}$
- 162.** What is the suitable equation to determine the price of one shirt if you purchased three shirts of the same type from an online store if the total cost is 490 LE, after adding 40 LE for shipping?
 (a) **$x + 40 = 490$** (b) **$3(x + 40) = 490$**
 (c) **$x + 120 = 490$** (d) **$3x + 40 = 490$**
- 163.** What is the algebraic expression equivalent to the following expression:
 $2x - 3 - 4x + 1$?
 (a) **$2x - 2$** (b) **$-2x + 2$** (c) **$-6x - 4$** (d) **$-2 - 2x$**

164. Which of the following equations is equivalent to the equation $2n + 1 = 3$?

- (a) $n + 2 = 6$ (b) $2n = 4$ (c) $2n = 2$ (d) $n + 1 = \frac{3}{2}$

165. Which inequality expresses that Bassem requires a minimum of 10 gigabytes per month to accomplish his work online ?

- (a) $x < 10$ (b) $x > 10$ (c) $x \leq 10$ (d) $x \geq 10$

Question 2 Answer each of the following:

1) Three persons invested in the construction of a factory. The first person paid 9,000,000 LE , the second person paid 6,000,000 LE, and the third person paid 7,500,000 LE.

At the end of the first year, the profits amounted to 2,250,000 LE, and the profits were distributed based on each person's capital contribution. Calculate the share of the first year's profit for each person.

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2) The opposite table shows the number of minutes a group of people spends on phone calls. Calculate the average number of minutes a person spends on phone conversations

Minutes	2	3	4	5	6
Frequency	12	20	36	20	12

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3) If my mother's age now is three times my age, and she is 24 years older than me, how old is each of us now?

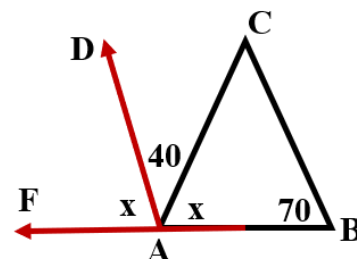
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4) In the opposite figure:

$$m(\angle CAD) = 40^\circ$$

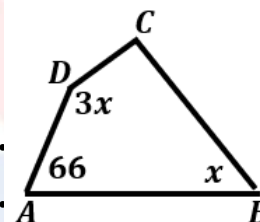
$$m(\angle B) = 70^\circ$$

Prove that : $\overrightarrow{AD} \parallel \overrightarrow{BC}$



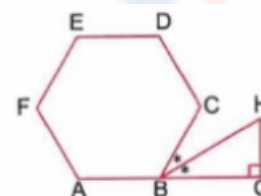
5) In the opposite figure:

Calculate with proof the value of X



6) In the opposite figure: ABCDEF is a regular hexagon.

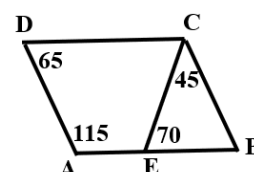
Find with proof: $m(\angle H)$



7) A teacher of mathematics wrote an integer on the board, and then he wrote another number , which was 17 less than twice the first number. If the sum of both numbers is 112, what number did the teacher initially write?

8) An amount of 7,200 LE was divided among three people in the ratio of 5: 4:3. Find each person's share

9) In the following figure: Prove that: ABCD is a parallelogram.



10) The following data represents the number of children's toys sold by a store over 30 days?

13	32	12	33	27	37	44	8	26	32
36	41	45	9	38	16	46	48	29	15
13	32	33	14	18	28	34	25	7	18

Represent these sales using a stem-and-leaf plot.

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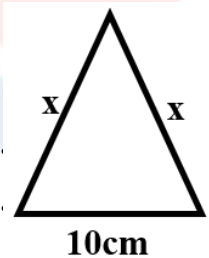
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11) If the perimeter of the adjacent triangle is 34 cm , what is the value of X?

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12) If the price of a television is 12,600 LE after a 16% discount, what was the price of the television before the discount?

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13) In the opposite figure : Calculate with prove the value of x^0

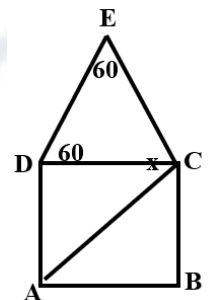
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14) In a survey conducted among a group of first preparatory grade students about their favourite color, the results were recorded in the opposing table. Draw a pie chart to represent this table.

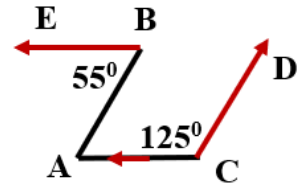
Favorite color	Percentage
Red	25%
Blue	30%
Green	10%
Yellow	35%

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- 15) In the opposite figure: $\overrightarrow{CA} // \overrightarrow{BE}$ $m(\angle B) = 55^\circ$, $m(\angle C) = 125^\circ$ prove that : $\overrightarrow{AB} // \overrightarrow{CD}$



- 16) Simplify the expression: $3(a - 2b) - 2(a + b)$ Then find the value of the expression when $a = 5$ and $b = -1$

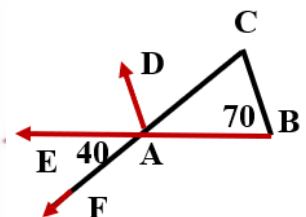
- 17) Three persons participated in a project with a capital of 750,000 LE. It was divided in the ratio 4:5:3 Calculate the share of each person in the capital.

- 18) ABCD is a parallelogram whose diagonals intersect at M. If A (3, 4) and M (-1,5), find the coordinates of C.

- 19) In the opposite figure:

$$\overrightarrow{BE} \cap \overrightarrow{CF} = \{A\}$$

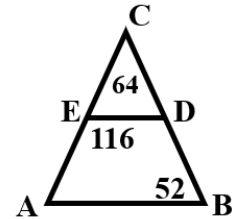
Prove that : $\overrightarrow{AD}$ bisects $\angle EAC$



- 20) ABCD is a rectangle whose diagonals are intersecting at M. If $AC = (3X - 4)$ cm and $BM = (X + 1)$ cm, what is the value of X?

21) In the opposite figure:

Prove that: $\overline{ED} \parallel \overline{AB}$



22) Divide an amount of 9,600 LE among three individuals in the ratio of 4:5:6
What is the share of each individual?

23) The opposite table shows the salaries of a group of employees in a company, expressed in LE. The company owner asserted that the average salary of his employees is 6,500 LE. Explain why the average salary might be misleading and give the impression of being the salaries higher than their actual values for most employees.

Salaries in L.E.	
Employee (1)	25,000
Employee (2)	4,000
Employee (3)	3,000
Employee (4)	2,500
Employee (5)	2,500
Employee (6)	2,000

24) Find solution set of the equation: $4(X-3) = 2(X+4)$ in $\mathbb{Q}$

25) The table below shows the number of hours studied weekly by a student in different subjects.

Subject	Arabic	Science	Math	English	Social Studies
Number of Students	8	5	11	6	6

Represent the table using pie charts.

- 26) The opposite table shows the time (in minutes) that different individuals spend on phone calls. Find the number of people who speak for 5 minutes, knowing that the average duration is 5.9 minutes.

Minutes (X)	4	5	6	7	8
Frequency (f)	22	M	36	20	12

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- 27) A restaurant displayed a menu with the prices of lunch meals in Egyptian pounds and announced that the average meal price is 132 pounds Explain why the average meal price might be misleading ?

Menu	
Kofta ($\frac{1}{2} kg$)	180
$\frac{1}{2} chicken$	150
Shawarma	160
Fish ($\frac{1}{2} kg$)	150
Water Bottle	20

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- 28) The following data represents the number of trousers sold by a store over a period of 30 days:

34	34	46	13	33	42	33	14	37	14
47	45	29	17	38	19	39	28	15	9
19	16	33	6	29	27	25	49	7	35

Represent these sales using a stem and leaf plot

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- 29) group of individuals were asked about their favorite color, and the results were as follows:

Color	Red	Yellow	Green	Black
Present	15%	25%		15%

Find the percentage of individuals who preferred Green, then represent the data using a pie chart

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30) The table below shows the number of work hours for 100 workers.

Hours (x)	4	6	7	8	9	10	13
Number of workers (f)	15	13	30	M	10	8	2

Find the value of m, then calculate the mean (average) of the number of work hours

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31) The following are the scores of 30 students in one of the tests:

25	35	23	35	36	34	40	28	35	20
37	36	30	39	29	37	28	38	40	32
40	33	26	35	22	29	37	38	37	31

Create a frequency table with intervals (20-,24-,...), then represent the data using a histogram

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32) A merchant bought goods for 9,620 LE and spent 680 LE on transportation. , then sold them with a 20% profit. Find the selling price.

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33) Find in $\mathbb{Q}$ the solution set of the equation: $5X+7=2X-5$

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34) If the map scale is 1:300,000, and the real distance between two cities is 270 km, how far apart are they on the map?

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35) Find in $\mathbb{N}$ the solution set of the equation: $3(X-2)-4X-8$

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36) A money box contains 42 banknote of 20 LE and 50 LE denominations. If the total value of the money in the money box is 1,800 LE, how many 20 LE banknote are there?

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37) Find the solution set of the equation in $\mathbb{Q}$: $3(2x - 4) - 8 = x$

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38) Write the expression in its simplest form: $4(m - n + 4) - 2(2m - 4n + 8)$, then find the value of the expression when $n = 5$

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39) Temperature is measured in Fahrenheit ($^{\circ}\text{F}$) or Celsius ($^{\circ}\text{C}$). Use the mathematical formula $F = 1.8C + 32$ to convert the temperature from 40°C to Fahrenheit

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40) Find three consecutive even numbers whose sum equals 168.

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41) A rectangle has a length 7 cm greater than its width, and its perimeter is 66 meters Find the length of the rectangle

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42) Write in the simplest form of the expression: $(n - 3m) - 3(2n - 1)$, and then find its value at $n = 2$, $m = - 2$

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43) Find in $\mathbb{Q}$ the solution set of the equation: $2\left(\frac{1}{2}x - 3\right) = 4x$

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44) Write an algebraic term like the algebraic term x^2 where its coefficient is -3 ,then find the sum of both terms.

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45) Write the mathematical formula that expresses the total area A of a cube, where one of its faces has an area equal to x^2

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46) Ahmed, Youssef, and Mohamed invested in a business project where Ahmed contributed 20,000 pounds, Youssef contributed 16,000 pounds, and Mohamed contributed 14,000 pounds. At the end of the year, the net profit was 5,000 pounds. Find Mohamed's share of the profits.

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47) If a model of a rectangular piece of land with dimensions of 4 cm and 5 cm, where each 1 cm in the model represents 7 meters in reality, what is the real perimeter of the piece of land for building a fence around it?

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48) Given: $A = \{9, 6, 7, 10\}$, $B = \{8, 9, 10\}$

Find

(1) $A \cup B$

(2) $A \cap B$

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49) A submarine moves vertically downward under the water and when it reached a depth of 56 meters the submarine started to ascend again. Determine the submarine's position after 18 minutes if they ascend at a speed of 3 meters per minute.

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50) A car consumes 7 liters of fuel to cover a distance of 84 km. How much fuel does it need to cover a distance of 156 km if it maintains the same fuel efficiency?

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51) If $A = \{1, 5, 3, 7\}$, and $B = \{1, 2, 5, 9\}$ Find each of: $A \cup B$ and $A \cap B$

.....

52) Alaa purchased a mobile phone for 6,750 LE and sold it for 7,776 LE Calculate the percentage of Alaa's profit.

.....

53) Spot the mistakes and make the necessary corrections.

(1) $-8 - (-3) = -11$	(2) $-\frac{5}{3} \times \frac{9}{15} = 1$
(3) $\frac{5}{8} + \frac{-3}{7} = \frac{2}{15}$	(4) $45 \div (-8) = 6$

54) If the magnification ratio of an insect's image is 30: 1, and the insect's real length is $2\frac{1}{2} mm$ find the length of the insect in the image in centimeters.

.....

55) If a shark ascends 124.1 meters from a depth of 152.5 meters below the water surface, where is the shark position relative to the water surface now?

.....

56) ABCD is a parallelogram in which the points A (5,4), B (3,1) and C (-4,1) , find: (1) Coordinates of the diagonals intersection , (2) The coordinates of point D

.....

57) In a survey of people about their preferred breakfast food, the results are as follows

Food type	Cheese	Beans and Falafel	Potatoes	Halvah and Jam
Percentage	30%	25%	15%	

(1) Find the percentage of people who prefer Halvah and Jam?

(2) Represent the survey results using a pie chart.

.....

58) Using the properties of multiplication in $\mathbb{Z}$, find the value of:
 $(-4) \times (-8) \times 25 \times (-125)$

.....

59) Use the distributive property to find the result of the following:

$$-\frac{4}{9} \times 8 + 9 \times \left(-\frac{4}{9}\right) + \frac{-4}{9}$$

.....

60) If $a = 1\frac{1}{2}$, $b = \frac{3}{4}$, $c = -\frac{2}{3}$, find the numerical value of the expression:

$$c + b$$

.....

61) A magnifying glass was used to magnify an insect from 0.7 mm to 14 cm. Find the magnification ratio.

.....

مراجعات النخبة

Question 1

Choose the correct answer:

1) (d)	2) (c)	3) (b)	4) (b)
5) (b)	6) (b)	7) (b)	8) (c)
9) (d)	10) (a)	11) (a)	12) (b)
13) (d)	14) (b)	15) (c)	16) (d)
17) (d)	18) (d)	19) (b)	20) (C)
21) (a)	22) (b)	23) (d)	24) (c)
25) (a)	26) (c)	27) (b)	28) (a)
29) (a)	30) (c)	31) (a)	32) (d)
33) (c)	34) (c)	35) (c)	36) (d)
37) (b)	38) (b)	39) (d)	40) (c)
41) (c)	42) (c)	43) (b)	44) (d)
45) (b)	46) (b)	47) (b)	48) (a)
49) (a)	50) (c)	51) (c)	52) (c)
53) (d)		54) (d)	55) (b)
56) (d)	57) (b)	58) (c)	59) (b)
60) (b)	61) (b)	62) (a)	63) (d)
64) (c)	65) (b)	66) (b)	67) (c)
68) (b)	69) (b)	70) (b)	71) (d)
72) (c)	73) (c)	74) (a)	75) (b)
76) (b)	77) (a)	78) (c)	79) (a)
80) (a)	81) (c)	82) (b)	83) (b)
84) (c)	85) (b)	86) (c)	87) (d)
88) (c)	89) (b)	90) (c)	91) (c)
92) (b)	93) (d)	94) (a)	95) (c)
96) (c)	97) (a)	98) (b)	99) (a)
100) (b)	101) (b)	102) (d)	103) (c)
104) (a)	105) (c)	106) (d)	107) (a)
108) (b)	109) (c)	110) (c)	111) (d)
112) (c)	113) (c)	114) (a)	115) (c)
116) (c)	117) (b)	118) (b)	119) (c)
120) (d)	121) (c)	122) (c)	123) (b)
124) (d)	125) (d)	126) (b)	127) (a)

128) (d)	129) (d)	130) (b)	131) (c)
132) (c)	133) (b)	134) (d)	135) (c)
136) (b)	137) (b)	138) (c)	139) (c)
140) (a)	141) (b)	142) (b)	143) (d)
144) (d)	145) (d)	146) (c)	147) (c)
148) (a)	149) (d)	150) (b)	151) (c)
152) (c)	153) (d)	154) (d)	155) (a)
156) (b)	157) (a)	158) (c)	159) (c)
160) (b)	161) (c)	162) (b)	163) (a)
164) (b)	165) (d)	166) (d)	167) (c)
168) (d)			

Question 2 Answer each of the following:

1) First :second :Third
 9,000,000 :6,000,000 :7,500,000 ($\div$
 100,000)
 90 :60 :75 ($\div$ 15)
 6 :4 :5

- Sum of parts = $6 + 4 + 5 = 15$ parts
- Part value = $\frac{2,250,000}{15} = 150,000LE$
- The first person's share = $6 \times 150,000 = 900,000 LE$
- The second person's share = $4 \times 150,000 = 600,000 LE$
- The third person's share = $5 \times 150,000 = 750,000 LE$

2) .

Number of minutes (x)	Frequency (f)	(x.f)
2	12	24
3	20	60
4	36	144
5	20	100
6	12	72
Sum	100	400

- The mean of what the person spends on phone call

$$= \frac{\sum(f \cdot x)}{\sum(f)} = \frac{400}{100} = 4 \text{ minutes}$$

3] Let the age of the son be x , the age of the mother is $3x$

$$\therefore 3x - x = 24$$

$$\therefore 2x = 24$$

$$x = \frac{24}{2} = 12$$

The age of the son is 12 years , the age of the mother 36 years

4] $m(\angle FAD) + m(\angle DAC) + m(\angle BAC) = 180^\circ$

$$x^\circ + 40^\circ + x^\circ = 180^\circ$$

$$2x + 40^\circ = 180^\circ$$

$$2x = 180^\circ - 40^\circ = 140^\circ$$

$$x = \frac{140}{2} = 70$$

$$m(\angle FAD) = m(\angle B) = 70^\circ$$

And they are corresponding angles

$$\overrightarrow{AD} // \overrightarrow{BC}$$

5] ABCD is a quadrilateral

The sum of measures of its interior angle = 360°

$$66 + 90 + x + 3x = 360$$

$$4x + 156^\circ = 360^\circ$$

$$4x = 360^\circ - 156^\circ = 204^\circ$$

$$x = \frac{204}{4} = 51^\circ$$

6] Let the age of the son be x , the age of the mother is $3x$

$$3x - x = 24$$

$$2x = 24$$

$$x = \frac{24}{2} = 12$$

The age of the son is 12 years , the age of the mother 36 years

$$m(\angle CBG) = 180^\circ - 120^\circ = 60^\circ$$

$$m(\angle CBH) = m(\angle HBG)$$

$$m(\angle HBG) = 60^\circ \div 2 = 30^\circ$$

in $\triangle HGB$

$$m(\angle G) = 90^\circ, m(\angle HBG) = 30^\circ$$

$$m(\angle H) = 180^\circ - (90^\circ + 30^\circ) = 60^\circ$$

7) Let the number be x , *it twice*

$$x + (2x - 17) = 112$$

$$3x - 17 = 112$$

$$3x = 112 + 17 = 129$$

$$x = \frac{129}{3} = 43$$

The number written by the teacher initially is 43

8) The sum of parts = $3 + 4 + 5 = 12$ parts

$$\text{The value of one part} = \frac{7,200}{12} = 600L. E$$

$$\text{The share of the first person} = 3 \times 600 = 1,800L. E$$

$$\text{The share of the second person} = 4 \times 600 = 2,400L. E$$

$$\text{The share of the third person} = 5 \times 600 = 3,000LE$$

9) In $\triangle BCE$

$$m(\angle BCE) = 45^\circ, m(\angle CEB) = 70^\circ$$

$$m(\angle B) = 180^\circ - (45^\circ + 70^\circ) = 65^\circ$$

$$m(\angle B) + m(\angle A) = 65^\circ + 115^\circ = 180^\circ$$

Two interior angle on the same side of the transversal

$$\overline{AB} // \overline{DC}$$

From (1) and (2): ABCD is a parallelogram

10) .

Stems	Leaves
0	789
1	23345688
2	56789
3	222334678
4	14568
Key:	1 3 means 12

11) The perimeter of the triangle = the sum of its side lengths

$$x + x + 10 = 34$$

$$2x + 10 = 34$$

$$2x = 34 - 10 = 24$$

$$x = \frac{24}{2} = 12cm$$

12) The price before discount Discount ratio The price after discount

100% :16% :84%

? : :12,600

$$\text{The price before discount} = \frac{100 \times 12,600}{84} = 15,000LE$$

13) ABCD is a square, overline $\overline{AC}$ is a diagonal

$$m(\angle ACD) = 45^0$$

In $\triangle CDE$

$$m(\angle ECD) = 180^0 - (60^0 + 60^0) = 60^0$$

$$m(\angle ECA) = m(\angle ACD) + (\angle ECD)$$

$$x = 45^0 + 60^0 = 105^0$$

14) The measure of the central angle of each sector

$$\text{Red} = 25\% \times 360^0 = 90^0$$

$$\text{Blue} = 30\% \times 360^0 = 108^0$$

$$\text{Green} = 10\% \times 360^0 = 36^0$$

$$\text{Yellow} = 35\% \times 360^0 = 126^0$$

15) $\overline{AC} \parallel \overline{BE}$, $\overline{AB}$ is a transversal

$$m(\angle B) = m(\angle A) = 55^0$$

Two alternating interior angles)

$$m(\angle A) + m(\angle C) = 55^0 + 125^0 = 180^0$$

And they are two interior angles on the same side of the transversal

$$\overline{AB} \parallel \overline{CD}$$

$$\text{16)} \quad 3(a - 2b) - 2(a + b) = 3a - 6b - 2a - 2b = 3a - 2a - 6b - 2b = a - 8b$$

$$\text{At } a = 5, b = -1$$

$$a - 8b = 5 - 8 \times (-1) = 5 + 8 = 13$$

17) First : second : third : sum

$$4 : 5 : 3 : 12$$

$$? : ? : ? : 750,000$$

$$\text{What the first person paid} = \frac{4 \times 750,000}{12} = 250,000LE$$

$$\text{What the second person paid} = \frac{5 \times 750,000}{12} = 312,500LE$$

$$\text{What the third person paid} = \frac{3 \times 750,000}{12} = 187,500LE$$

18] Let $C(x,y)$

$$\left(\frac{3+x}{2}, \frac{4+y}{2}\right) = (-1, 5)$$

$$\frac{3+x}{2} = -1, 3+x = -2, x = -5$$

$$\frac{4+y}{2} = 5, 4+y = 10, y = 6$$

$$C(-5, 6)$$

19] $\overline{AD} \parallel \overline{BC}$, $\overline{AB}$ is a transversal

$$m(\angle DAE) = m(\angle B) = 70^\circ, (\text{corresponding angles})$$

$$\overline{CF} \cap \overline{BE} = \{A\}$$

$$m(\angle CAB) = m(\angle FAE) = 40^\circ, (\text{V.O.A})$$

$$m(\angle DAC) = 180^\circ - (70^\circ + 40^\circ) = 70^\circ$$

$$m(\angle EAD) = m(\angle DAC)$$

$$\overline{AD} \text{ bisect } \angle EAC$$

20] ABCD is a rectangle

$$BM = \frac{1}{2}AC$$

$$x + 1 = \frac{1}{2}(3x - 4)$$

$$x + 1 = \frac{3}{2}x - 2$$

$$x - \frac{3}{2}x = -2 - 1$$

$$-\frac{1}{2}x = -3$$

$$x = -3 \times (-2) = 6$$

21] In ABC

$$m(\angle C) = 64^\circ, m(\angle B) = 52^\circ$$

$$m(\angle A) = 180^\circ - (64^\circ + 52^\circ) = 64^\circ$$

$$m(\angle A) + m(\angle AED) = 64^\circ + 116^\circ = 180^\circ$$

and they are two interior angles on the same side of the transversal

$$\overline{ED} \parallel \overline{AB}$$

22] First : second : third : sum

$$4 : 5 : 6 : 15$$

$$? : ? : ? : 9,600$$

$$\text{First share} = \frac{4 \times 9,600}{15} = 2,560L. E$$

$$\text{Second share} = \frac{5 \times 9,600}{15} = 3,200L. E$$

$$\text{Third share} = \frac{6 \times 9,600}{15} = 3,840L. E$$

$$231 \text{ Mean} = \frac{25.000+4.000+3.000+2.500+2.500+2.000}{6} = 6,500$$

That is, the company owner used the arithmetic mean to measure the average salaries in the company , and this is a misleading measure because there is an exterm value of 25,000, which gave an impression of salaries that is contrary to reality. and he should use (the median) which is more reliable in case of exterm values.

$$\text{The median} = \frac{2,500+3,000}{2} = 2,750L.E$$

$$241 \quad 4(x - 3) = 2(x + 4)$$

$$4x - 12 = 2x + 8$$

$$4x - 2x = 8 + 12$$

$$2X = 20$$

$$x = 20 \div 2$$

$$x = 10$$

The solution set = {10}

251 The measure of the central angle of each sector:

$$(\text{Arabic}) = \frac{8}{36} \times 360^0 = 80^0$$

$$(\text{Science}) = \frac{5}{36} \times 360^0 = 50^0$$

$$(\text{math}) = \frac{11}{36} \times 360^0 = 110^0$$

$$(\text{English}) = \frac{6}{36} \times 360^0 = 60^0$$

$$(\text{social studies}) = \frac{6}{36} \times 360^0 = 60^0$$

261 .

x	f	$(f \cdot x)$
4	22	88
5	M	5m
6	36	216
7	20	140
8	12	96
Total	90+m	540+5m

$$\bar{x} = \frac{\sum(fx)}{\sum f} = 5.9, \frac{540+5m}{90+m} = 5.9$$

$$531 + 5.9m = 540 + 5m, 5.9m - 5m = 540 - 531$$

$$0.9m = 9$$

$$m = 9 \div 0.9 = 10$$

The number of people whose speak 5 minutes is 10

27) The mean of prices = $\frac{180+150+160+150+20}{5} = 132LE$

28)

Stems	Leave
0	679
1	34456799
2	57899
3	333445789
4	25679
Key	4 2 means 42

29) The measure of the central angle of each sector

Green = $100\% - (15\% + 25\% + 15\%) = 45\%$

Red = $\frac{15}{100} \times 360^\circ = 54^\circ$

Yellow = $\frac{25}{100} \times 360^\circ = 90^\circ$

Green = $\frac{45}{100} \times 360^\circ = 162^\circ$

Black = $\frac{15}{100} \times 360^\circ = 54^\circ$

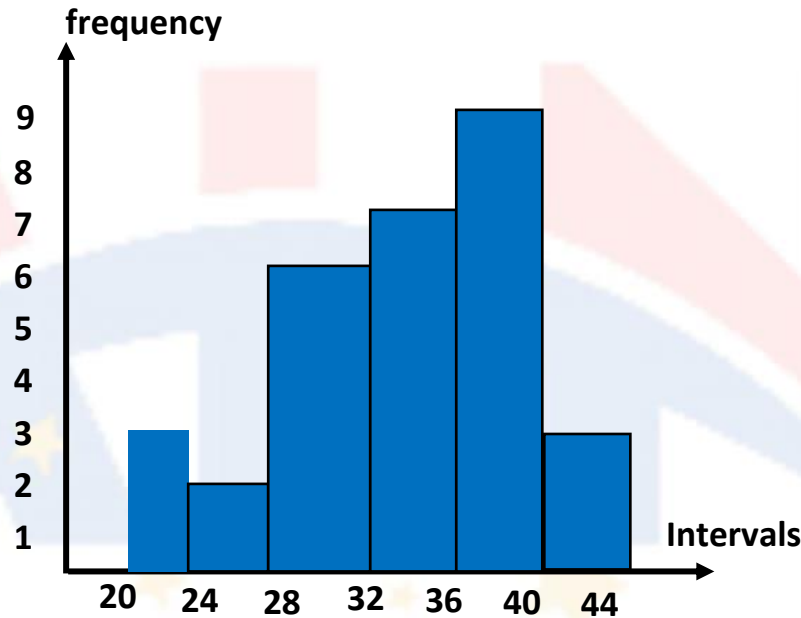
30) $m = 100 - (15 + 13 + 30 + 10 + 8 + 2) = 22$

(x)	(f)	(f . x)
4	15	60
6	13	78
7	30	210
8	22	176
9	10	90
10	8	80
13	2	26
Total	100	720

$$\bar{x} = \frac{720}{100} = 7.2$$

31)

Sets	20 -	24 -	28 -	32 -	36 -	40 -
Frequency	3	2	6	7	9	3



32) The total cost = $9,620 + 680 = 10,300$ LE

The percent of selling = $100\% + 20\% = 120\%$

The selling price = $10,300 * 120\% = 12,360$ LE

33) $5x + 7 = 2x - 5$

$$5x - 2x = -5 - 7$$

$$3x = -12$$

$$x = -12 \div 3 = -4$$

The solution set = $\{-4\}$

34) Drawing scale = $\frac{\text{length in drawing}}{\text{Real length}}$

$$\frac{1}{3,000,000} = \frac{\text{Length in drawing}}{270 \times 100,000}$$

$$\text{Length in drawing} = \frac{1 \times 27,000,000}{3,000,000} = 9\text{cm}$$

35) $3(x - 2) - 4x = -8$

$$3x - 6 - 4x = -8$$

$$3x - 4x = -8 + 6$$

$$-x = -2$$

$$x = 2$$

The solution set = $\{2\}$

- 36)** Let the number of 20-LE banknote be X and the number of 50-LE banknote be (42 - x)

$$20X + 50(42 - X) = 1,800$$

$$20x + 2,100 - 50x = 1,800$$

$$20x - 50x = 1,800 - 2,100$$

$$-30x = -300$$

$$x = -300 \div (-30) = 10$$

The number of 20-LE banknote is 10

- 37)** $3(2x - 4) - 8 = x$

$$6x - 12 - 8 = x$$

$$6x - 20 = x$$

$$6x - x = 20$$

$$5x = 20$$

$$x = 20/5$$

$$x = 4$$

The solution set = $\{4\}$

- 38)** $(m - n + 4) - 2(2m - 4n + 8)$

$$= 4m - 4n + 16 - 4m + 8n - 16$$

$$= 4m - 4m - 4n + 8n + 16 - 16$$

$$= (4m - 4m) + (-4n + 8n) + (16 - 16) = 4n, \text{ When } 15$$

- 39)** $4n = 4 * 5 = 20$

- 40)** $F = 40 * 1.8 + 32 = 104$

Let the numbers are

$$x, x + 2, x + 4$$

$$x + x + 2 + x + 4 = 168$$

$$3x + 6 = 168$$

$$3x = 168 - 6 = 162$$

$$x = 162/3 = 54$$

The numbers are 54, 56 and 58

- 41)** Let the length be X meters and the width is (X-7) m.

$$2(x + x - 7) = 66$$

$$2x - 7 = 66/2 = 33$$

$$2x = 33 + 7 = 40$$

$$x = 40/2 = 20$$

The length = 20 m.

42] The expression

$$2(n - 3m) - 3(2n - 1) = 2n - 6m - 6n + 3 = -4n - 6m + 3$$

$$\text{The value: } -4 * 2 - 6(-2) + 3 = -8 + 12 + 3 = 7$$

43] $2\left(\frac{1}{2}x - 3\right) = 4x$

$$x - 6 = 4x$$

$$x - 4x = 6$$

$$-3x = 6$$

$$x = 6 / (-3) = -2$$

44] The algebraic term is $-3x^2$

$$\text{The sum: } x^2 + (-3x^2) = -2x^2$$

45] $A = 6x^2$

46] Ahmed : Youssef : Mohamed : sum

$$20,000:16,000:14,000:50,000$$

$$?:?:?:5,000$$

$$\text{Mohamed's share} = \frac{14,000 \times 5,000}{50,000} = 1,400LE$$

47] Drawing scale = $\frac{\text{Length in drawing}}{\text{Real length}}$

$$\frac{1}{7m} = \frac{5cm}{\text{Real length}}$$

$$\text{Real length} = \frac{5 \times 7}{1} = 35m$$

$$\frac{1}{7m} = \frac{4cm}{\text{Real width}}$$

$$\text{Real width} = \frac{4 \times 7}{1} = 28m$$

$$\text{The perimeter} = 2(35 + 28) = 126m$$

48] $A \cup B = \{9, 6, 7, 10, 8\}$

$$A \cap B = \{9, 10\}$$

49] The submarine moves up a distance = $18 \times 3 = 54m$ The submarine position after 18 minutes = $-56 + 54 = -2$

i.e. 2 meter below sea level

.. The depth of the submarine is 2 meters

50] Let X is the amount of fuel in litres that the car need.

$$\frac{x}{156} = \frac{7}{84}$$

$$x = \frac{7 \times 156}{84} = 13 \text{ litres}$$

51) $A \cup B = \{1, 5, 3, 7, 2, 9\}$, $A \cap B = \{1, 5\}$

52) The profit = $7,776 - 6,750 = 1,026$ LE

The percentage of profit = $\frac{1,026}{6,750} \times 100\% = 15.2\%$

53) (1) $-8 - (-3) = -8 + 3 = -5$

(2) $-\frac{5}{3} \times \frac{9}{15} = -1$

(3) $\frac{5}{8} + \frac{-3}{7} = \frac{35}{56} + \frac{-24}{56} = \frac{11}{56}$

(4) $45 \div (-8) = -6$

54) Length in drawing : Real Length

$$\begin{array}{ccc} 30 & : & 1 \\ ? & : & 2\frac{1}{2} \end{array}$$

The drawing length = $\frac{30 \times 2\frac{1}{2}}{1} = 75\text{mm} = 7.5\text{cm}$

55) The position of the shark = $-152.5 + 124.1 = -28.4$, then the shark at depth 28.4 meter

56) (1) $(\frac{1}{2}, \frac{5}{2})$, (2) $D(-2, 4)$

57) The percentage of persons who preferred halvah and jam = $100\% - (30\% + 25\% + 15\%) = 30\%$

The measure of central angle of each sectors

Cheese : $\frac{30}{100} \times 360^\circ = 108^\circ$

Beans and falafel = $\frac{25}{100} \times 360^\circ = 90^\circ$

Potatoes = $\frac{15}{100} \times 360^\circ = 54^\circ$

Halvah and jam = $\frac{30}{100} \times 360^\circ = 108^\circ$

58) $(-4) \times 25(-8)(-125)$ (Commutative property)

= $(-4 \times 25)(-8(-125))$ (Associative property)

= $-100 \times 1000 = -100000$

59) $-\frac{4}{9} \times (8 + 9 + 1) = -\frac{4}{9} \times 18 = -8$

60) $1\frac{1}{2} \times (-\frac{2}{3}) + \frac{3}{4} = \frac{3}{2} \times (-\frac{2}{3}) + \frac{3}{4} = -1 + \frac{3}{4} = -\frac{1}{4}$

61) The ratio of magnification = $\frac{\text{drawing length}}{\text{real length}} = \frac{14\text{cm}}{0.7\text{mm}}$

حمل الآن

مجانا وحصريا

المراجعة رقم (4)

الترم الاول



Q1: Choose the correct answer

- 1 $7x + 5y + z$ increases $2x - y + z$ by
 (a) $5x + 4y + 2z$ (b) $5x + 6y$ (c) $9x + 4y$ (d) $9x - 6y - 2z$
- 2 If the mean of the following set of data $x + 1$, 8 , $2x + 4$, $x - 5$, $x + 2$ is 7
 Then the value of $x =$
 (a) 8 (b) 5 (c) 3 (d) 2
- 3 ABCD is a parallelogram in which: $m(\angle A) + m(\angle C) = 140^\circ$, then $m(\angle B) =$
 (a) 40° (b) 70° (c) 110° (d) 220°
- 4 The first proportional of 12 , 3 and 4 is
 (a) 15 (b) 9 (c) 7 (d) 3
- 5 The multiplicative identity is
 (a) 0 (b) 1 (c) -1 (d) 2
- 6 A land with an area of (63) Fadans was divided between two persons in the ratio of $4:5$. Which of the following gives the share of one of them?
 (a) 45 (b) 30 (c) 28 (d) 9
- 7 $k + k + k =$
 (a) k^3 (b) $3k$ (c) $3k^3$ (d) $k + 3$
- 8 The result of subtracted $\frac{-5}{7}$ from $\frac{3}{14}$ equals
 (a) $\frac{3}{14}$ (b) $\frac{13}{14}$ (c) $\frac{-1}{2}$ (d) $\frac{1}{2}$
- 9 A sum of money 420 L.E was distributed between Murad and Farida in the ratio $2 : 5$, then the share of Farida is L.E
 (a) 120 (b) 300 (c) 280 (d) 720



10 If $a = |-5|$, $b = -7$, then $a \times b = \dots\dots\dots$

- (a) 35 (b) -35 (c) -7 (d) 5

11 The number of subsets of the set $\{0, 2, 9\}$ is $\dots\dots\dots$

- (a) 3 (b) 6 (c) 8 (d) 9

12 The result of subtracting $7a$ from $15a$ is $\dots\dots\dots$

- (a) $-8a$ (b) $8a$ (c) $8a^2$ (d) $-22a$

13 Obtuse angle supplements $\dots\dots\dots$ angle.

- (a) acute (b) straight (c) obtuse (d) right

14 $2x = 2$, then $3x - 1 = \dots\dots\dots$

- (a) 2 (b) 3 (c) 4 (d) 5

15 $\emptyset \dots\dots\dots \{0, 100\}$

- (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

16 If $\frac{x}{7} = \frac{10}{35}$, then $x - 3 = \dots\dots\dots$

- (a) -1 (b) 1 (c) 2 (d) -2

17 If L_1 and L_2 are to coplanar straight lines, $L_1 \perp L_3$ and $L_2 \perp L_3$ then $\dots\dots\dots$

- (a) $L_1 \parallel L_2$ (b) $L_1 \perp L_2$ (c) L_1 intersects L_2 (d) L_1 is coincides L_2

18 If the origin point is the midpoint of AB and A located in the 2nd quadrant, in which quadrant is point B located?

- (a) 1st quadrant (b) 3rd quadrant (c) 2nd quadrant (d) 4th quadrant

19 If the sum of 3 numbers is 63, then the arithmetic mean of these numbers is equal to $\dots\dots\dots$

- (a) 6 (b) 60 (c) 21 (d) 66



20 The length of the projection of a line segment on a straight line the length of the main line segment.

- (a) $>$ (b) $=$ (c) $<$ (d) $\leq$

21 The numbers 5, 4, can be lengths of sides of a triangle.

- (a) 8 (b) 9 (c) 10 (d) 12

22 "The sum of three consecutive odd numbers is 87" as equation is

- (a) $3x = 87$ (b) $3x + 3 = 87$ (c) $3x + 4 = 87$ (d) $3x + 6 = 87$

23 If $\angle A$ complements $\angle B$ and $m(\angle A) = \frac{2}{3} m(\angle B)$, then $m(\angle B) = \dots\dots\dots^\circ$

- (a) 18 (b) 36 (c) 54 (d) 90

24 If $x < 0$ and $y > 0$, in which quadrant is the point $(x, -y)$ located?

- (a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant

25 $2x^2 + 4x^2 = \dots\dots\dots$

- (a) $6x^4$ (b) $6x^2$ (c) $8x^2$ (d) $8y^4$

26 Which of the following drawing scales represent enlargement?

- (a) 1 : 20 (b) 5 : 23 (c) 7 : 3 (d) 4 : 35

27 If $\frac{x+4}{6} = \frac{7}{14}$, The $x = \dots\dots\dots$

- (a) -7 (b) 7 (c) -1 (d) 1

28 If two adjacent sides of a parrallelogram are equal in length, then becomes

- (a) a square (b) a rhombus (c) a rectangle (d) a trapezium

29 The easiest way to find the first quartile and the third quartile is to use

- (a) bar graph (b) bar graph (c) dot plot (d) box plot



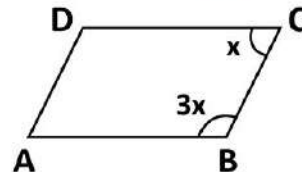
- 30** Which of the following charts does not display the actual data?
 (a) bar graph (b) dot plot (c) histogram (d) Stem-and-leaf plot
- 31** The decrease of $-3ab$ than $2ab$ is
 (a) $-ab$ (b) ab (c) $-5ab$ (d) $5ab$
- 32** $-m + m = 0$ is called property
 (a) identity (b) inverse (c) distributive (d) closure
- 33** For a set of values: if $\bar{X} = 50$ and $\sum (f \cdot x) = 2,500$, what is the value of $\sum f$?
 (a) 125,000 (b) 2,550 (c) 50 (d) 2,450
- 34** If the ratio of two complementary angles is $7 : 11$, then the measure of the smaller angle is
 (a) 145° (b) 70° (c) 90° (d) 35°
- 35** If $x < 0$ and $y > 0$, in which quadrant is the point $(-x, -y)$ located?
 (a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant
- 36** If angle measure Y complements an angle of measure
 (a) $180^\circ - Y$ (b) $90^\circ - Y$ (c) $180^\circ + Y$ (d) $90^\circ + Y$
- 37** The sum of lengths of any two sides of a triangle the length of the third side
 (a) $>$ (b) $=$ (c) $<$ (d) $\geq$
- 38** If the original price of a mobile is 17,700 LE, then its sale price after apply a discount 12% is
 (a) 2,124 (b) 19,824 (c) 15,576 (d) 15,756
- 39** The third quartile for the values 17, 12, 15, 11, 14, 10, 16 is
 (a) 10 (b) 11 (c) 14 (d) 16



40 If $2ab = 10$, then $3ab = \dots\dots\dots$

- (a) 5 (b) 6 (c) 15 (d) 30

41 In the opposite figure:
ABCD is a parallelogram, then $m(\angle A) \dots\dots\dots$



- (a) 30° (b) 45° (c) 60° (d) 135°

42 In the parallelogram, each two consecutive angles are $\dots\dots\dots$

- (a) complementary (b) equal in measure (c) supplementary (d) reflex

43 If $C(-3, y)$ is the midpoint of AB where $A(x, -6)$ and $B(1, -8)$, then $x + y = \dots\dots\dots$

- (a) -11 (b) 11 (c) -18 (d) -14

44 $\{1, 2, 3, 5, 7, 13\} \dots\dots\dots$ the set of prime number

- (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

45 Triangle consists of two $\dots\dots\dots$ angles at least

- (a) acute (b) obtuse (c) right (d) reflex

46 $-3 \frac{1}{4} \times \dots\dots\dots = 1$

- (a) $\frac{13}{4}$ (b) $\frac{4}{13}$ (c) $-\frac{4}{13}$ (d) $-\frac{13}{4}$

47 $4x$ increases ($-4x$) by $\dots\dots\dots$

- (a) zero (b) $8x$ (c) $-8x$ (d) $16x$

48 If the length in drawing is 3 cm, and the length in real is 18 m,
Then the drawing scale is $\dots\dots\dots$

- (a) 1 : 6,000 (b) 1 : 600 (c) 1 : 60 (d) 1 : 6

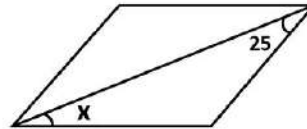
49 Which of the following equations has no solution in Z?

- (a) $6x = 24$ (b) $6x = 15$ (c) $6x = 18$ (d) $6x = 12$



50 In opposite figure:

ABCD is a rhombus what is the value of x?



- (a) 25° (b) 50° (c) 100° (d) 130°

51 -3 exceeds 5 by amount of

- (a) -8 (b) -2 (c) 2 (d) 8

52 The centre of the first set of the sets : 7-, 13-, 19-, 25- is

- (a) 6 (b) 7 (c) 10 (d) 13

53 The zero angle complements angle.

- (a) zero (b) acute (c) obtuse (d) right

54 The solution set of the equation $4x = -12$ in N is

- (a) $\{-3\}$ (b) $\{3\}$ (c) $\emptyset$ (d) $\{0\}$

55 The sum of measures of the interior angles of any quadrilateral equals

- (a) 270° (b) 360° (c) 180° (d) 90°

56 If $(3, m - 2)$ lies on the X-axis, what is the value of m?

- (a) -3 (b) -2 (c) 2 (d) 3

57 If two ratio equal, then the product of extremes the product of means

- (a) less than (b) equals (c) greater than (d) otherwise

58 Which of the following equations is equivalent to the equation $x + 3 = 12$

- (a) $x - 3 = -12$ (b) $x + (-3) = 12$ (c) $x - (-3) = 12$ (d) $x - (-3) = -12$

59 If the arithmetic mean of the values 3, 5, 9, 7, x is 6, what is the value of x?

- (a) 30 (b) 6 (c) 10 (d) 12



60 In the quadrilateral ABCD, If $m(\angle A) = 3m(\angle B) = m(\angle C) = 120^\circ$, then $m(\angle D) = \dots\dots\dots$

- (a) 60° (b) 40° (c) 80° (d) 160°

61 The additive identity is $\dots\dots\dots$

- (a) 0 (b) 1 (c) -1 (d) 2

62 If $x + 3 = 5$, $x \in \mathbb{Z}^-$, Then the solution set is $\dots\dots\dots$

- (a) $\{-3\}$ (b) $\{2\}$ (c) $\{-5\}$ (d) $\emptyset$

63 If 0.8, x, 4 and 5 are in a proportion, then $x = \dots\dots\dots$

- (a) 0.1 (b) 2 (c) 1 (d) 0.2

64 If $\frac{|a|}{7} = 6$, then $a = \dots\dots\dots$

- (a) 24 (b) -42 (c) 42 (d) 42 or -42

65 If $m(\angle A) = 46^\circ$. then $m(\text{reflex } \angle A) = \dots\dots\dots^\circ$

- (a) 44 (b) 134 (c) 314 (d) 360

66 In the triangle ABC, $\frac{AB + BC}{AC} \dots\dots\dots 1$

- (a) $>$ (b) $=$ (c) $<$ (d) $\geq$

67 If the arithmetic mean of the values 5, 4, 8, a, $a + 4$ is 21, then $a = \dots\dots\dots$

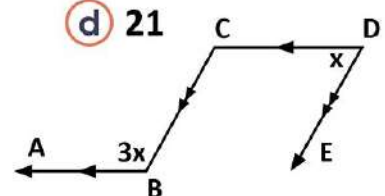
- (a) 29 (b) 42 (c) 105 (d) 21

68 In the opposite figure:
 $CD \parallel BA$, $DE \parallel CB$, then: $x = \dots\dots\dots$

- (a) 60° (b) 45° (c) 120° (d) 90°

69 If the mode for the set of values: 7, 4, 5, 6, $x + 1$, 3 is 7, then the value of x is $\dots\dots\dots$

- (a) 6 (b) 7 (c) 5 (d) 4



70 In the parallelogram, each two opposite angles are

- (a) complementary (b) equal in measure (c) supplementary (d) reflex

71 The sum of $x + 2y - 3z$ and $-2y - x - 3z$ is

- (a) $-6z$ (b) zero (c) $6z$ (d) $2x - 4y + 6z$

72 The projection of the point $(-3, 5)$ on x-axis is

- (a) $(5, -3)$ (b) $(0, 5)$ (c) $(-3, 0)$ (d) $(3, -5)$

73 Drawing > 1 , then it expresses

- (a) reduction (b) minimization (c) enlargement (d) otherwise

74 In parallelogram XYZL, if $m(\angle X) = m(\angle Y)$, Then $m(\angle Y) = \dots\dots\dots^\circ$.

- (a) 120 (b) 45 (c) 90 (d) 180

75 If $a + b = 0$, where $a \neq b$, then $a \times b \dots\dots\dots$ zero.

- (a) $>$ (b) $<$ (c) $=$ (d) $\geq$

76 Three times a number is 27, then $\frac{1}{3}$ this number =

- (a) 9 (b) 12 (c) 27 (d) 3

77 If $X \subset Y$, Then $X \cap Y = \dots\dots\dots$

- (a) X (b) Y (c) $X \cup Y$ (d) otherwise

78 If two straight lines intersect, then each two vertically angles are

- (a) supplementary (b) adjacent (c) complementary (d) equal in measure

78 If the data set has $\bar{x} = 6$, $\sum (f \cdot x) = 48$. Then what is the value of $\sum f$?

- (a) 48 (b) 24 (c) 6 (d) 8



- 79 The lengths of two side of an isosceles triangle are 3 cm and 7 cm,
Then the third side could be cm
(a) 3 (b) 4 (c) 5 (d) 7
- 80 If $5x + 8x + 2x + 4x = 114$, then $5x + 3 = \dots\dots\dots$
(a) 33 (b) 35 (c) 47 (d) $8x$
- 81 If $x \div y = 1$, then $x = \dots\dots\dots$
(a) 1 (b) x (c) y (d) 0
- 82 If $a : b : c = 4 : 5 : 3$, and $b - c = 9$, Then the value of $a = \dots\dots\dots$
(a) 9 (b) 18 (c) 15 (d) 21
- 83 If $\frac{x}{y} = \frac{5}{7}$, then $\frac{7x}{5y} = \dots\dots\dots$
(a) $\frac{5}{7}$ (b) 1 (c) $\frac{7}{5}$ (d) $\frac{1}{5}$
- 84 For a set of values: if $\bar{X} = 20$ and $\sum (f \cdot x) = 2,500$, what is the value of $\sum f$?
(a) 50,000 (b) 5,000 (c) 1,250 (d) 125
- 85 If the real length of an insect is 0.7 mm. and its length after magnification
is 6.3 cm then the ratio of magnification is
(a) 9 : 1 (b) 90 : 1 (c) 900 : 1 (d) 9,000 : 1
- 86 If a straight line cuts two parallel straight lines, then each two interior angles are
(a) complementary (b) perpendicular (c) supplementary (d) equal in measure
- 87 The sum of supplementary angles equals the sum of the measures of angles.
(a) 2 right (b) 4 right (c) 3 right (d) 5 right
- 88 If the data set has, $\sum f = 7$, $\sum (f \cdot x) = 35$ Then what is the value of $\bar{x}$?
(a) 35 (b) 7 (c) 5 (d) 8



89 The arithmetic mean of the values 3, 4, 8, a, a + 2 is 15, then a =

- (a) 29 (b) 58 (c) 75 (d) 17

90 If the two vertically angles are complementary angles, the the measure of each angle is

- (a) 45° (b) 50° (c) 180° (d) 90°

91 The additive inverse of $x - 5$ is

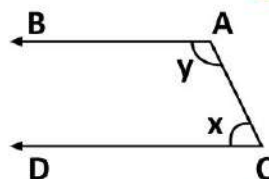
- (a) $x - 5$ (b) $-x - 5$ (c) $-x + 5$ (d) 5

92 If the ratio 7 : 13 is the same ratio $x : 52$, then $x = \dots\dots\dots$

- (a) 14 (b) 21 (c) 28 (d) 35

93 In the opposite figure:

$\overrightarrow{AB} \parallel \overrightarrow{CD}$, $\frac{x}{y} = \frac{7}{11}$, what is the of x?



- (a) 60° (b) 70° (c) 100° (d) 110°

94 If $A = \{ 5, 7, 2 \}$, Then 57 A

- (a) $\in$ (b) $\notin$ (c) $\subset$ (d) $\not\subset$

95 If $\angle X$ complements $\angle Y$, $m(\angle X) = 2m(\angle Y)$, then $m(\angle Y) = \dots\dots\dots$

- (a) 45° (b) 30° (c) 60° (d) 90°

96 $8 + (-10) > \dots\dots\dots$

- (a) 2 (b) -2 (c) 0 (d) -4

97 From the following stem-and-leaf plot, the mode =

- (a) 4 (b) 48
(c) 8 (d) 34

Stems	Leaves
2	1 1 3 5 6
3	3 4 4 5 6
4	7 8 8 8 9
5	0 1 3 5 7



98 The mathematical expression which expresses that: subtract x from 1 is.....

- (a) $x - 1$ (b) $x + 1$ (c) $-1 - x$ (d) $1 - x$

99 ABCDE is a pentagon where $m(\angle A) = m(\angle B) = m(\angle C) = 80^\circ$ and $m(\angle D) = 60^\circ$ then The figure is

- (a) regular (b) concave (c) convex (d) not a polygon

100 If a straight line intersects two parallel straight lines, then each two alternate angles on the same side of the transversal are

- (a) Complementary (b) Supplementary (c) Adjacent (d) Equal in measure

101 If the range for a set of values is 16, and the minimum value is 8, then the maximum value is.....

- (a) 16 (b) 8 (c) 32 (d) 24

102 If the substitution set is $\{1, 4, 6\}$, then the solution set of the equation $2x = 12$ is

- (a) $\{5\}$ (b) $\{2\}$ (c) $\{6\}$ (d) $\emptyset$

103 If the sum of (5) numbers is (90), then the arithmetic mean of these numbers is equal to

- (a) 8 (b) 10 (c) 16 (d) 18

104 Which of the following sets has quadrilaterals whose sides are all equal in length?

- (a) { Square, rectangle } (b) { Rectangle, rhombus }
(c) { Square, rhombus } (d) { Parallelogram, rhombus }



Q2: Answer The Following

1 When does a quadrilateral become a parallelogram? List 3 cases

2 The opposite table represents hours of work of 100 workers.

No. of hours (x)	4	6	7	8	9	10	13
No. of workers (f)	15	13	30	m	10	8	2

Find the value of m, then find mean of the hours of work

3 If ABCD is a rectangle, where A(2, -2), B(2, 5), and C(-3, 5). Find the coordinates of each of the following: the intersection point of the diagonals, and the vertex D

4 If $X = \{5, 1, 7, 9\}$, $Y = \{9, 3, 7, 2\}$, $Z = \{7, 5\}$, Find:

a $X \cap Y = \dots\dots\dots$

b $Y \cup Z = \dots\dots\dots$

5 If the point $(a - 2, 3a + 9)$ lies on x-axis, determine the quarter in which the point $(a, 6 - a)$ is located

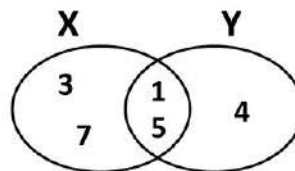


6 In the opposite figure:

$X = \dots\dots\dots$ $Y = \dots\dots\dots$

$X \cap Y = \dots\dots\dots$

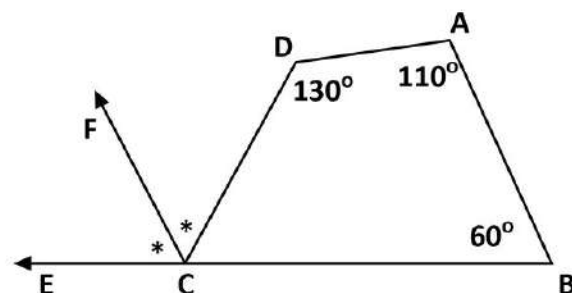
$X \cup Y = \dots\dots\dots$



7 In the opposite figure:

$m(\angle A) = 110^\circ$, $m(\angle D) = 130^\circ$, $m(\angle D) = 60^\circ$

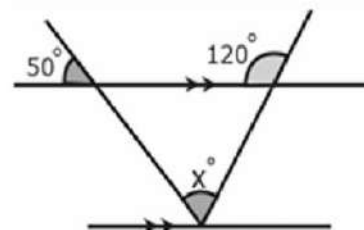
, $E \in BC$, CF bisects $\angle DCE$



8 Murad deposit 75,000 L.E in Al-Ahly bank, with annual interest 23%

Find the total amount which he gets at the end of one year.

9 Find the value of x



10 A shopkeeper bought some goods for 45,000 L.E. He spent 5,000 L.E

to transport them. He sold these goods for 62,500 L.E, Find percentage of profit

11 If $A = 15$, $b = -2$. Find the result of :

(a) $|ab|$

(b) $|b + a|$

$12 \div b$

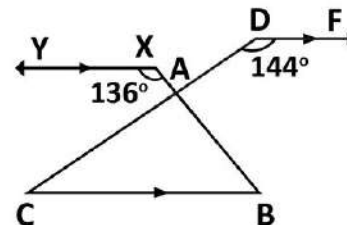


12 In the opposite figure :

$BC \parallel DF \parallel XY$

$m(\angle D) = 144^\circ$, $m(\angle X) = 136^\circ$

Find with proof: $m(\angle BAC)$



13 Write the following expressions in the simplest form:

a $-5x - 7y - 7x - 2y + 7y - 3x$

b $2(3x - 4) - 3(x - 2)$

14 In the opposite stem and leaf plot:

Write all the data

Find the mode, median, Q1, and Q3

Stems	Leaves
4	1 1 2
5	2 3
6	2 2 2
7	1 3 5

Key | 4 | 1 meas 41

15 ABCD is a quadrilateral where, $A(-3, -2)$, $B(2, -2)$, $C(4, 2)$ and $D(-2, 2)$
Is it a parallelogram or not?

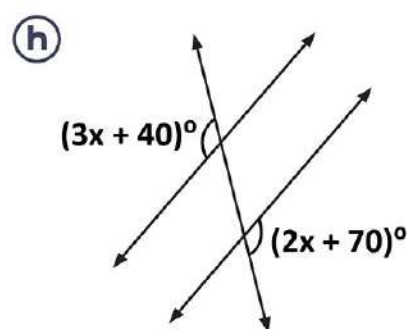
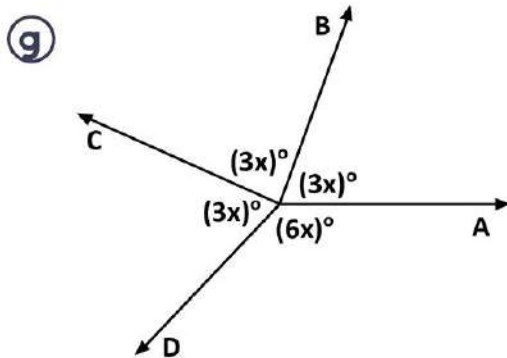
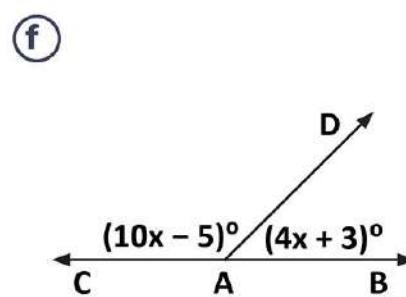
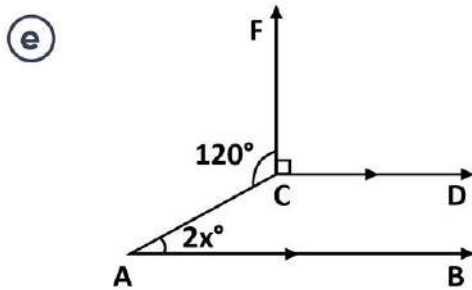
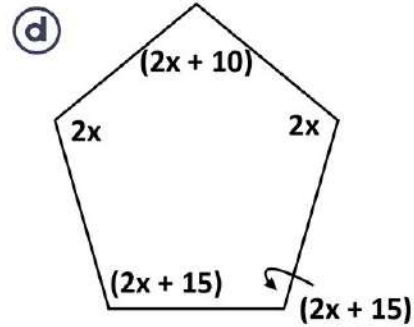
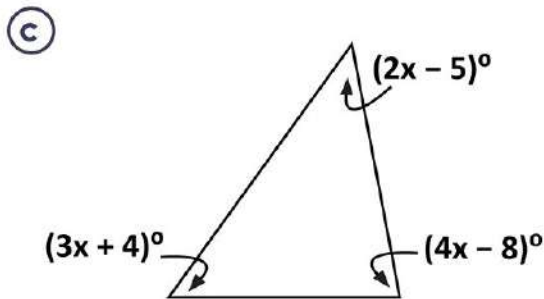
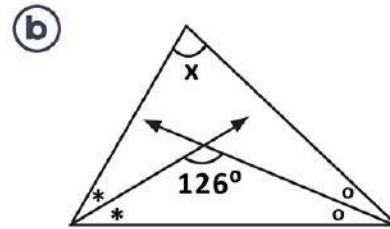
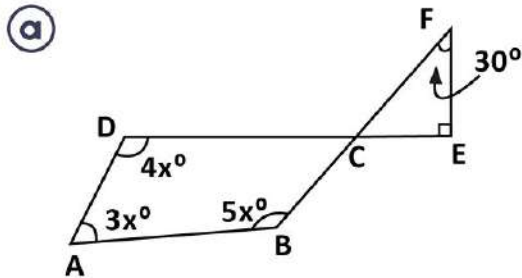
16 By using multiplicative properties, Find the value of each of the following:

$$\frac{3}{4} \times 35 + 35 \times \frac{1}{2} - 35 \times \frac{1}{4}$$

17 Write the expression: $7m - 3n - 5m + 4n$ in its simplest form



18 Find the value of x :



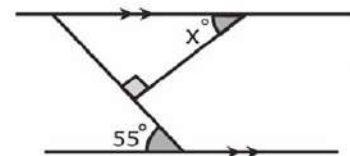
19 Find the S.S of the following equations in N:

a $6x - 2x + 7 = 4$

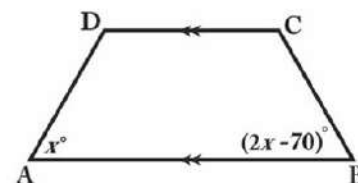
b $4(x - 1) = 3(x + 1)$

20 What is the increase of the expression: $4k - 3n + 2m$ than $5k + m - 2n$

21 Find X in the opposite figure:



22 In the opposite figure: $m(\angle A) = m(\angle B)$
Find: $m(\angle C)$



23 ABC is a triangle in which the ratio between its angles is 5 : 7 : 8,
Find the measure of each angle.

24 In triangle XYZ, where the length of XY is 8 cm, and the length of YZ is 5 cm
What is the smallest integer that can represent the length of the third side?

25 Write all the subsets from the set $\{ 3, 6 \}$



- 26 Add the expressions: $3a - 2b$ and $2a + 5b$ then find the numerical values of the result when $a = 2$ and $b = 1$

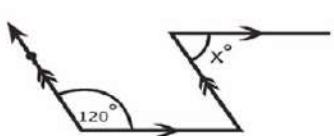
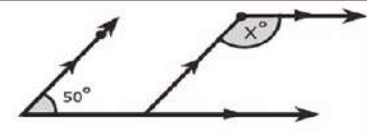
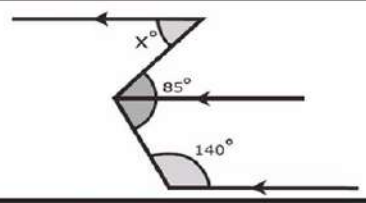
- 27 A TV price after deduction rate of 16% is 12,600 L.E, What is the TV price before the deduction?

- 28 If $X = \{ 1, 3, 7, 5 \}$, $Y = \{ 9, 4, 6, 2 \}$ Find:

a $X \cap Y = \dots\dots\dots$

b $Y \cup X = \dots\dots\dots$

- 29 Find the value of x

(1)	(2)	(3)
		

- 30 An integer is such that if its double is added to 4, the result is 24. What is this number?

- 31 A magnified image of a microscopic insect was taken. If its length in the image is 12 cm and its real length is 3 mm, find the scale of the drawing.

- 32 $2(x + 3) = 20$, Then the value of $x = \dots\dots\dots$

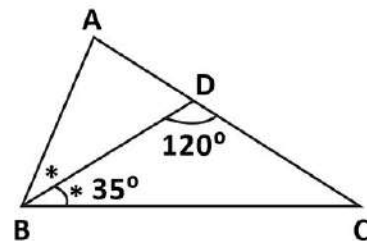


33 In the opposite figure:

BD bisects $\angle ABC$, $m(\angle DBC) = 35^\circ$

$m(\angle BDC) = 120^\circ$

Find: $m(\angle A)$



34 If $x = \frac{-2}{5}$, $y = \frac{6}{5}$, Find the result of $3x + y$ in its simplest form

35 Alaa purchased a mobile phone for 16,600 L.E and sold it for 17,762 L.E
Calculate the percent of Alaa's profit.

36 Find the S.S of the following equations in Q:

a) $4(x + 1) = 2(x - 1)$

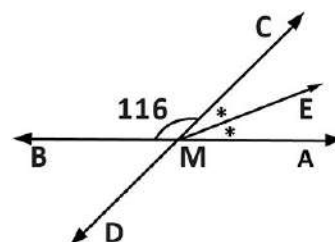
b) $3x + 6 = 30 - 5x$

37 In a factory, 10 workers produce 300 pieces of cloth.
How many workers are needed to produce 630 pieces?

38 $\overleftrightarrow{AB} \cap \overleftrightarrow{CD} = \{M\}$, $m(\angle CMB) = 116^\circ$

,ME bisects $\angle AMC$

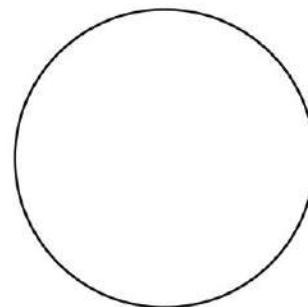
Find: $m(\angle AMD)$, $m(\angle AMC)$, $m(\angle AME)$



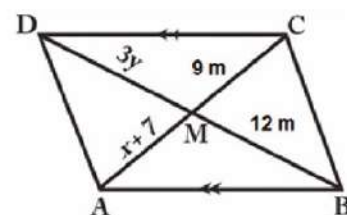
- 39 If the colours preferred by 55 students in fourth grade are given in the opposite table

Use a pie chart to represent this data

Colours	Red	Yellow	Black
frequency	18	24	18



- 40 In the opposite figure:
Find with proof the value of: x , y



- 41 In the following stem-and-leaf plot, which shows the average battery life for (20) mobile phones, find the median, mode, first quartile, and third quartile

Stems	Leaves								
0	8								
1	0	1	1	2	3	4	4	4	6
2	0	1	5	6	7	8	9		
3	0	1	1						

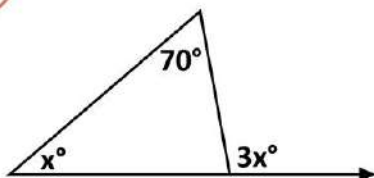
Key: 3 | 1 represents 31 hours

- 42 Two vertically opposite angles, one of them measures $(2x^\circ)$ and the other measures $(x + 21^\circ)$ Find the measure of one of them.

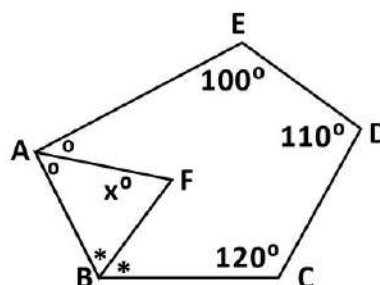


43 Find the value of x of the following:

a



b



44 In the opposite stem and leaf plot:

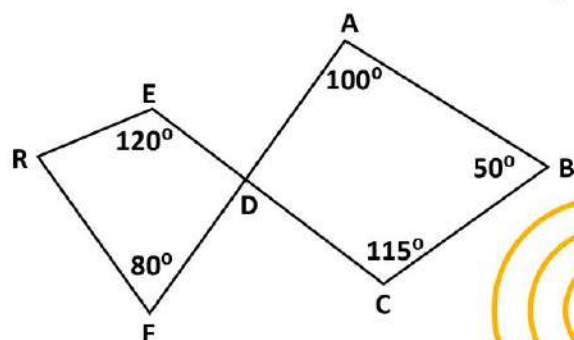
Write all the data

Find the mode, median, Q1, and Q3

Stems	Leaves
2	1 1 2
3	2 3
4	2 2 2
5	1 3 5
Key 2 3 meas 3.2	

45 In the triangle ABC, where the length of AB is 5 cm and the length of BC is 7 cm.
What the smallest possible integer value for the length AC?

46 $AF \cap CE = \{D\}$, $m(\angle A) = 100^\circ$
 $m(\angle C) = 115^\circ$, $m(\angle B) = 50^\circ$
 $m(\angle F) = 80^\circ$, $m(\angle E) = 120^\circ$
 Find $m(\angle R)$



47 Three consecutive odd numbers whose sum is 213, what are there numbers?



48 A parallelogram with a base length of 12 cm. Its corresponding height is $(3x - 1)$ cm and its area is 60 squared centimeter, then $x = \dots\dots\dots$.

49 If the price of a dress is 810 pounds after the discount, then if the discount rate is 10% of the original price, calculate the price of the dress before the discount?

50 The following data represents the number of shirts sold by clothes shop over 30 days.

13	32	12	33	27	37	44	8	26	32
36	41	45	9	38	16	46	48	29	15
13	32	14	18	28	34	25	7	18	33

Represent these data using a stem-and-leaf plot,
The find the median and the mode.

51 If ABCD is a parallelogram where $A(-1, 1)$, $B(4, 2)$, and $D(1, 4)$
Determine the coordinates of the following:

- a The point of intersection of its diagonal b The vertex C

52 The number when added to its triple becomes 72 is $\dots\dots\dots$.

53 If x is an odd number, then the next odd number to it is $\dots\dots\dots$.



54 The solution set of $3x - 1 = 2x + 5$, where $x \in \mathbb{N}$ is

55 Three people participated in a trade, the first paid 70,000 pounds, and the second paid 80,000 pounds. The third payment 90,000 pounds and profits at the end of the year were 96,000 pounds.

Calculate their share of the profit at the end of the year.

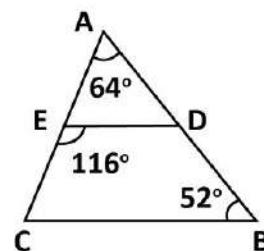
56 In the opposite figure:

In the ABC , $m(\angle A) = 64^\circ$, $m(\angle B) = 52^\circ$

, $m(\angle DEC) = 116^\circ$

, $E \in AC$, $D \in AB$

Prove that: $ED \parallel CB$

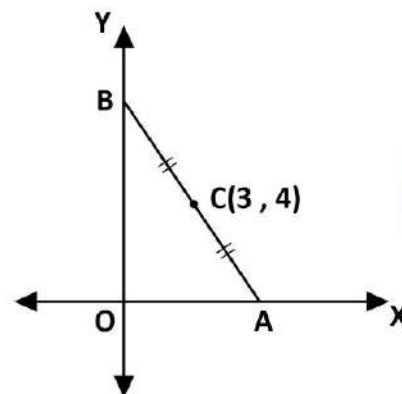


57 A picture of a building is taken with a drawing scale 1 : 100, if the height of the building in the picture is 3 cm, What is its real height?

58 In the opposite figure:

Point C is the midpoint of AB

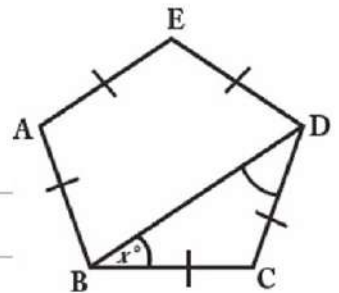
Find the coordinates of each of A and B



59 Simplify: $5(a - 2b) + 3(4a + b)$ in its simplest form

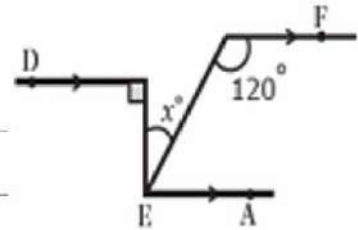


- 60** In the opposite figure, ABCDE is a regular pentagon.
Find the value of x



- 61** If the scale on the map is 1 : 600,000 and the distance between two points on the map is 4.5 cm, Find the real distance between the two points

- 62** Find the value of x



- 63** If $X = \{7, 5, 4, 1\}$, $Y = \{9, 4, 5, 2\}$, $Z = \{2, 10\}$, Find:

a $X \cap Y = \dots\dots\dots$

b $Y \cup Z = \dots\dots\dots$

c $\{4, 5, 6\} \dots\dots\dots Y$

- 64** If $A = 2$, $B = -4$, $C = -3$ find the numerical value of: $\left(\frac{3B}{A}\right) \times C$

65 $Z_+ \cap Z_- = \dots\dots\dots$

66 $2 \frac{3}{5} \times \dots\dots\dots = 1$

67 If $12 \in \{3, 5, 2x\}$, then $x = \dots\dots\dots$

68 $\frac{3}{4}$ exceeds $\frac{3}{8}$ by $\dots\dots\dots$

69 If $x \div y = 1$, then $x = \dots\dots\dots$

70 $a = -2$, $b = |-7|$, then $2ab = \dots\dots\dots$

71 If $X \subset Y$, Then $X \cap Y = \dots\dots\dots$

72 The Sum of two complementary angles equals $\dots\dots\dots$

73 If the drawing scale < 1 , this expresses $\dots\dots\dots$



- 74 In the opposite table,
the measure of circular sector
of Handball sector is ° .

Sports	Football	Handball	Tennis
frequency	140	360	100

- 75 The coefficient of the algebraic term $-3k^3$ is

- 76 The perimeter of the rectangle whose dimensions are $7y$, $4y$ is

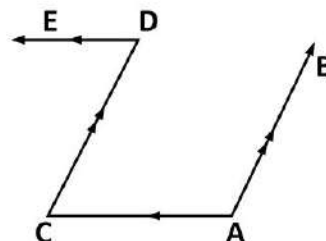
- 77 Maryam reads 20 pages of the book in 45 minutes. How many hours would
it take to read 80 pages if you read at the same rate?

- 78 The decrease of $-3ab$ than $2ab$ is

- 79 $5a^2b - \dots = 7a^2b$

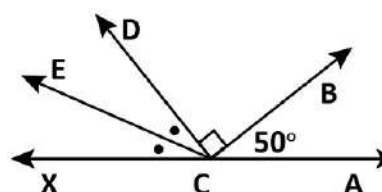
- 80 If ABCD is a parallelogram, $m(\angle B) = 3x + 10$, $m(\angle D) = 2x + 50$, Find $m(\angle C)$

- 81 $\overrightarrow{DE} \parallel \overrightarrow{AC}$, $\overrightarrow{AB} \parallel \overrightarrow{DC}$, $m(\angle A) = 110^\circ$
Find $m(\angle C)$, $m(\angle D)$



- 82 Two integer numbers their difference is 12 and the smaller is m ,
then the greater is

- 83 In the opposite figure:
 $\overrightarrow{CE}$ bisects $\angle DCX$
Find $m(\angle ECA)$



Q1: Choose the correct answer

- 1 $7x + 5y + z$ increases $2x - y + z$ by
 (a) $5x + 4y + 2z$ (b) $5x + 6y$ (c) $9x + 4y$ (d) $9x - 6y - 2z$
- 2 If the mean of the following set of data $x + 1$, 8 , $2x + 4$, $x - 5$, $x + 2$ is 7
 Then the value of $x =$
 (a) 8 (b) 5 (c) 3 (d) 2
- 3 ABCD is a parallelogram in which: $m(\angle A) + m(\angle C) = 140^\circ$, then $m(\angle B) =$
 (a) 40° (b) 70° (c) 110° (d) 220°
- 4 The first proportional of 12 , 3 and 4 is
 (a) 15 (b) 9 (c) 7 (d) 3
- 5 The multiplicative identity is
 (a) 0 (b) 1 (c) -1 (d) 2
- 6 A land with an area of (63) Fadans was divided between two persons in the ratio of $4:5$. Which of the following gives the share of one of them?
 (a) 45 (b) 30 (c) 28 (d) 9
- 7 $k + k + k =$
 (a) k^3 (b) $3k$ (c) $3k^3$ (d) $k + 3$
- 8 The result of subtracted $\frac{-5}{7}$ from $\frac{3}{14}$ equals
 (a) $\frac{3}{14}$ (b) $\frac{13}{14}$ (c) $\frac{-1}{2}$ (d) $\frac{1}{2}$
- 9 A sum of money 420 L.E was distributed between Murad and Farida in the ratio $2 : 5$, then the share of Farida is L.E
 (a) 120 (b) 300 (c) 280 (d) 720



10 If $a = |-5|$, $b = -7$, then $a \times b = \dots\dots\dots$

- ☐ a 35 ☒ b -35 ☐ c -7 ☐ d 5

11 The number of subsets of the set $\{0, 2, 9\}$ is $\dots\dots\dots$

- ☐ a 3 ☐ b 6 ☒ c 8 ☐ d 9

12 The result of subtracting $7a$ from $15a$ is $\dots\dots\dots$

- ☐ a $-8a$ ☒ b $8a$ ☐ c $8a^2$ ☐ d $-22a$

13 Obtuse angle supplements $\dots\dots\dots$ angle.

- ☒ a acute ☐ b straight ☐ c obtuse ☐ d right

14 $2x = 2$, then $3x - 1 = \dots\dots\dots$

- ☒ a 2 ☐ b 3 ☐ c 4 ☐ d 5

15 $\emptyset \dots\dots\dots \{0, 100\}$

- ☐ a $\in$ ☐ b $\notin$ ☒ c $\subset$ ☐ d $\not\subset$

16 If $\frac{x}{7} = \frac{10}{35}$, then $x - 3 = \dots\dots\dots$

- ☒ a -1 ☐ b 1 ☐ c 2 ☐ d -2

17 If L_1 and L_2 are to coplanar straight lines, $L_1 \perp L_3$ and $L_2 \perp L_3$ then $\dots\dots\dots$

- ☒ a $L_1 \parallel L_2$ ☐ b $L_1 \perp L_2$ ☐ c L_1 intersects L_2 ☐ d L_1 is coincides L_2

18 If the origin point is the midpoint of AB and A located in the 2nd quadrant, in which quadrant is point B located?

- ☐ a 1st quadrant ☐ b 3rd quadrant ☐ c 2nd quadrant ☒ d 4th quadrant

19 If the sum of 3 numbers is 63, then the arithmetic mean of these numbers is equal to $\dots\dots\dots$

- ☐ a 6 ☐ b 60 ☒ c 21 ☐ d 66



20 The length of the projection of a line segment on a straight line the length of the main line segment.

- ☐ a $>$ ☐ b $=$ ☐ c $<$ ☒ d $\leq$

21 The numbers 5, 4, can be lengths of sides of a triangle.

- ☒ a 8 ☐ b 9 ☐ c 10 ☐ d 12

22 "The sum of three consecutive odd numbers is 87" as equation is

- ☐ a $3x = 87$ ☐ b $3x + 3 = 87$ ☐ c $3x + 4 = 87$ ☒ d $3x + 6 = 87$

23 If $\angle A$ complements $\angle B$ and $m(\angle A) = \frac{2}{3} m(\angle B)$, then $m(\angle B) = \dots\dots\dots^\circ$

- ☐ a 18 ☐ b 36 ☒ c 54 ☐ d 90

24 If $x < 0$ and $y > 0$, in which quadrant is the point $(x, -y)$ located?

- ☐ a 1st quadrant ☐ b 2nd quadrant ☒ c 3rd quadrant ☐ d 4th quadrant

25 $2x^2 + 4x^2 = \dots\dots\dots$

- ☐ a $6x^4$ ☒ b $6x^2$ ☐ c $8x^2$ ☐ d $8y^4$

26 Which of the following drawing scales represent enlargement?

- ☐ a 1 : 20 ☐ b 5 : 23 ☒ c 7 : 3 ☐ d 4 : 35

27 If $\frac{x+4}{6} = \frac{7}{14}$, The $x = \dots\dots\dots$

- ☐ a -7 ☐ b 7 ☒ c -1 ☐ d 1

28 If two adjacent sides of a parallelogram are equal in length, then becomes

- ☐ a a square ☒ b a rhombus ☐ c a rectangle ☐ d a trapezium

29 The easiest way to find the first quartile and the third quartile is to use

- ☐ a bar graph ☐ b bar graph ☐ c dot plot ☒ d box plot



30 Which of the following charts does not display the actual data?

- (a) bar graph (b) dot plot (c) Histogram (d) Stem-and-leaf plot

31 The decrease of $-3ab$ than $2ab$ is

- (a) $-ab$ (b) ab (c) $-5ab$ (d) $5ab$

32 $-m + m = 0$ is called property

- (a) identity (b) inverse (c) distributive (d) closure

33 For a set of values: if $\bar{X} = 50$ and $\sum (f \cdot x) = 2,500$, what is the value of $\sum f$?

- (a) 125,000 (b) 2,550 (c) 50 (d) 2,450

34 If the ratio of two complementary angles is $7 : 11$, then the measure of the smaller angle is

- (a) 145° (b) 70° (c) 90° (d) 35°

35 If $x < 0$ and $y > 0$, in which quadrant is the point $(-x, -y)$ located?

- (a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant

36 If angle measure Y complements an angle of measure

- (a) $180^\circ - Y$ (b) $90^\circ - Y$ (c) $180^\circ + Y$ (d) $90^\circ + Y$

37 The sum of lengths of any two sides of a triangle the length of the third side

- (a) $>$ (b) $=$ (c) $<$ (d) $\geq$

38 If the original price of a mobile is 17,700 LE, then its sale price after apply a discount 12% is

- (a) 2,124 (b) 19,824 (c) 15,576 (d) 15,756

39 The third quartile for the values 17, 12, 15, 11, 14, 10, 16 is

- (a) 10 (b) 11 (c) 14 (d) 16



40 If $2ab = 10$, then $3ab = \dots\dots\dots$

(a) 5

(b) 6

(c) 15

(d) 30

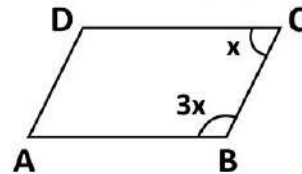
41 In the opposite figure:
ABCD is a parallelogram, then $m(\angle A) \dots\dots\dots$

(a) 30°

(b) 45°

(c) 60°

(d) 135°



42 In the parallelogram, each two consecutive angles are

(a) complementary (b) equal in measure (c) supplementary (d) reflex

43 If $C(-3, y)$ is the midpoint of AB where $A(x, -6)$ and $B(1, -8)$, then $x + y = \dots\dots\dots$

(a) -11

(b) 11

(c) -18

(d) -14

44 $\{1, 2, 3, 5, 7, 13\}$ the set of prime number

(a) $\in$

(b) $\notin$

(c) $\subset$

(d) $\not\subset$

45 Triangle consists of two angles at least

(a) acute

(b) obtuse

(c) right

(d) reflex

46 $-3 \frac{1}{4} \times \dots\dots\dots = 1$

(a) $\frac{13}{4}$

(b) $\frac{4}{13}$

(c) $-\frac{4}{13}$

(d) $-\frac{13}{4}$

47 $4x$ increases ($-4x$) by

(a) zero

(b) $8x$

(c) $-8x$

(d) $16x$

48 If the length in drawing is 3 cm, and the length in real is 18 m,
Then the drawing scale is

(a) 1 : 6,000

(b) 1 : 600

(c) 1 : 60

(d) 1 : 6

49 Which of the following equations has no solution in Z ?

(a) $6x = 24$

(b) $6x = 15$

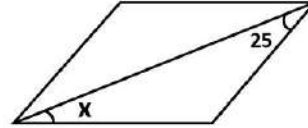
(c) $6x = 18$

(d) $6x = 12$



50 In opposite figure:

ABCD is a rhombus what is the value of x?



☒ a 25°

☐ b 50°

☐ c 100°

☐ d 130°

51 -3 exceeds 5 by amount of

☒ a -8

☐ b -2

☐ c 2

☐ d 8

52 The centre of the first set of the sets : 7-, 13-, 19-, 25- is

☐ a 6

☐ b 7

☒ c 10

☐ d 13

53 The zero angle complements angle.

☐ a zero

☐ b acute

☐ c obtuse

☒ d right

54 The solution set of the equation $4x = -12$ in N is

☐ a $\{-3\}$

☐ b $\{3\}$

☒ c $\emptyset$

☐ d $\{0\}$

55 The sum of measures of the interior angles of any quadrilateral equals

☐ a 270°

☒ b 360°

☐ c 180°

☐ d 90°

56 If $(3, m - 2)$ lies on the X-axis, what is the value of m?

☐ a -3

☐ b -2

☒ c 2

☐ d 3

57 If two ratio equal, then the product of extremes the product of means

☐ a less than

☒ b equals

☐ c greater than

☐ d otherwise

58 Which of the following equations is equivalent to the equation $x + 3 = 12$

☐ a $x - 3 = -12$

☐ b $x + (-3) = 12$

☒ c $x - (-3) = 12$

☐ d $x - (-3) = -12$

59 If the arithmetic mean of the values 3, 5, 9, 7, x is 6, what is the value of x?

☐ a 30

☒ b 6

☐ c 10

☐ d 12



60 In the quadrilateral ABCD, If $m(\angle A) = 3m(\angle B) = m(\angle C) = 120^\circ$, then $m(\angle D) = \dots\dots\dots$

(a) 60°

(b) 40°

(c) 80°

(d) 160°

61 The additive identity is $\dots\dots\dots$

(a) 0

(b) 1

(c) -1

(d) 2

62 If $x + 3 = 5$, $x \in \mathbb{Z}^-$, Then the solution set is $\dots\dots\dots$

(a) $\{-3\}$

(b) $\{2\}$

(c) $\{-5\}$

(d) $\emptyset$

63 If 0.8, x, 4 and 5 are in a proportion, then $x = \dots\dots\dots$

(a) 0.1

(b) 2

(c) 1

(d) 0.2

64 If $\frac{|a|}{7} = 6$, then $a = \dots\dots\dots$

(a) 24

(b) -42

(c) 42

(d) 42 or -42

65 If $m(\angle A) = 46^\circ$. then $m(\text{reflex } \angle A) = \dots\dots\dots^\circ$

(a) 44

(b) 134

(c) 314

(d) 360

66 In the triangle ABC, $\frac{AB + BC}{AC} \dots\dots\dots 1$

(a) $>$

(b) $=$

(c) $=$

(d) $\geq$

67 If the arithmetic mean of the values 5, 4, 8, a, $a + 4$ is 21, then $a = \dots\dots\dots$

(a) 29

(b) 42

(c) 105

(d) 21

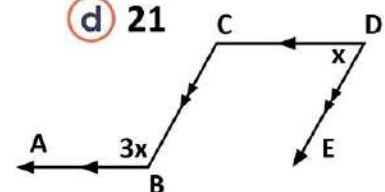
68 In the opposite figure:
 $CD \parallel BA$, $DE \parallel CB$, then: $x = \dots\dots\dots$

(a) 60°

(b) 45°

(c) 120°

(d) 90°



69 If the mode for the set of values: 7, 4, 5, 6, $x + 1$, 3 is 7, then the value of x is $\dots\dots\dots$

(a) 6

(b) 7

(c) 5

(d) 4



70 In the parallelogram, each two opposite angles are

- ☐ a complementary ☒ b equal in measure ☐ c supplementary ☐ d reflex

71 The sum of $x + 2y - 3z$ and $-2y - x - 3z$ is

- ☒ a $-6z$ ☐ b zero ☐ c $6z$ ☐ d $2x - 4y + 6z$

72 The projection of the point $(-3, 5)$ on x-axis is

- ☐ a $(5, -3)$ ☐ b $(0, 5)$ ☒ c $(-3, 0)$ ☐ d $(3, -5)$

73 Drawing > 1 , then it expresses

- ☐ a reduction ☐ b minimization ☒ c enlargement ☐ d otherwise

74 In parallelogram XYZL, if $m(\angle X) = m(\angle Y)$, Then $m(\angle Y) = \dots\dots\dots^\circ$.

- ☐ a 120 ☐ b 45 ☒ c 90 ☐ d 180

75 If $a + b = 0$, where $a \neq b$, then $a \times b \dots\dots\dots$ zero.

- ☐ a $>$ ☒ b $<$ ☐ c $=$ ☐ d $\geq$

76 Three times a number is 27, then $\frac{1}{3}$ this number =

- ☐ a 9 ☐ b 12 ☐ c 27 ☒ d 3

77 If $X \subset Y$, Then $X \cap Y = \dots\dots\dots$

- ☒ a X ☐ b Y ☐ c $X \cup Y$ ☐ d otherwise

78 If two straight lines intersect, then each two vertically angles are

- ☐ a supplementary ☐ b adjacent ☐ c complementary ☒ d equal in measure

78 If the data set has $\bar{x} = 6$, $\sum (f \cdot x) = 48$. Then what is the value of $\sum f$?

- ☐ a 48 ☐ b 24 ☐ c 6 ☒ d 8



79 The lengths of two side of an isosceles triangle are 3 cm and 7 cm,
Then the third side could be cm

- (a) 3 (b) 4 (c) 5 (d) 7

80 If $5x + 8x + 2x + 4x = 114$, then $5x + 3 = \dots\dots\dots$

- (a) 33 (b) 35 (c) 47 (d) $8x$

81 If $x \div y = 1$, then $x = \dots\dots\dots$

- (a) 1 (b) x (c) y (d) 0

82 If $a : b : c = 4 : 5 : 3$, and $b - c = 9$, Then the value of $a = \dots\dots\dots$

- (a) 9 (b) 18 (c) 15 (d) 21

83 If $\frac{x}{y} = \frac{5}{7}$, then $\frac{7x}{5y} = \dots\dots\dots$

- (a) $\frac{5}{7}$ (b) 1 (c) $\frac{7}{5}$ (d) $\frac{1}{5}$

84 For a set of values: if $\bar{X} = 20$ and $\sum (f \cdot x) = 2,500$, what is the value of $\sum f$?

- (a) 50,000 (b) 5,000 (c) 1,250 (d) 125

85 If the real length of an insect is 0.7 mm. and its length after magnification is 6.3 cm then the ratio of magnification is

- (a) 9 : 1 (b) 90 : 1 (c) 900 : 1 (d) 9,000 : 1

86 If a straight line cuts two parallel straight lines, then each two interior angles are

- (a) complementary (b) perpendicular (c) supplementary (d) equal in measure

87 The sum of supplementary angles equals the sum of the measures of angles.

- (a) 2 right (b) 4 right (c) 3 right (d) 5 right

88 If the data set has, $\sum f = 7$, $\sum (f \cdot x) = 35$ Then what is the value of $\bar{x}$?

- (a) 35 (b) 7 (c) 5 (d) 8



89 The arithmetic mean of the values 3, 4, 8, a, a + 2 is 15, then a =

(a) 29

(b) 58

(c) 75

(d) 17

90 If the two vertically angles are complementary angles, the the measure of each angle is

(a) 45°

(b) 50°

(c) 180°

(d) 90°

91 The additive inverse of $x - 5$ is

(a) $x - 5$

(b) $-x - 5$

(c) $-x + 5$

(d) 5

92 If the ratio 7 : 13 is the same ratio $x : 52$, then $x = \dots\dots\dots$

(a) 14

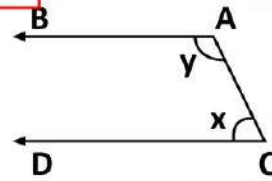
(b) 21

(c) 28

(d) 35

93 In the opposite figure:

$\overrightarrow{AB} \parallel \overrightarrow{CD}$, $\frac{x}{y} = \frac{7}{11}$, what is the of x?



(a) 60°

(b) 70°

(c) 100°

(d) 110°

94 If $A = \{ 5, 7, 2 \}$, Then 57 A

(a) $\in$

(b) $\notin$

(c) $\subset$

(d) $\not\subset$

95 If $\angle X$ complements $\angle Y$, $m(\angle X) = 2m(\angle Y)$, then $m(\angle Y) = \dots\dots\dots$

(a) 45°

(b) 30°

(c) 60°

(d) 90°

96 $8 + (-10) > \dots\dots\dots$

(a) 2

(b) -2

(c) 0

(d) -4

97 From the following stem-and-leaf plot, the mode =

(a) 4

(c) 8

Stems	Leaves
2	1 1 3 5 6
3	3 4 4 5 6
4	7 8 8 8 9
5	0 1 3 5 7

(b) 48

(d) 34



98 The mathematical expression which expresses that: subtract x from 1 is.....

☐ a $x - 1$

☐ b $x + 1$

☐ c $-1 - x$

☒ d $1 - x$

99 ABCDE is a pentagon where $m(\angle A) = m(\angle B) = m(\angle C) = 80^\circ$ and $m(\angle D) = 60^\circ$ then The figure is

☐ a regular

☒ b concave

☐ c convex

☐ d not a polygon

100 If a straight line intersects two parallel straight lines, then each two alternate angles on the same side of the transversal are

☐ a Complementary ☐ b Supplementary ☐ c Adjacent

☒ d Equal in measure

101 If the range for a set of values is 16, and the minimum value is 8, then the maximum value is.....

☐ a 16

☐ b 8

☐ c 32

☒ d 24

102 If the substitution set is $\{1, 4, 6\}$, then the solution set of the equation $2x = 12$ is

☐ a $\{5\}$

☐ b $\{2\}$

☒ c $\{6\}$

☐ d $\emptyset$

103 If the sum of (5) numbers is (90), then the arithmetic mean of these numbers is equal to

☐ a 8

☐ b 10

☐ c 16

☒ d 18

104 Which of the following sets has quadrilaterals whose sides are all equal in length?

☐ a { Square, rectangle }

☐ b { Rectangle, rhombus }

☒ c { Square, rhombus }

☐ d { Parallelogram, rhombus }



كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

